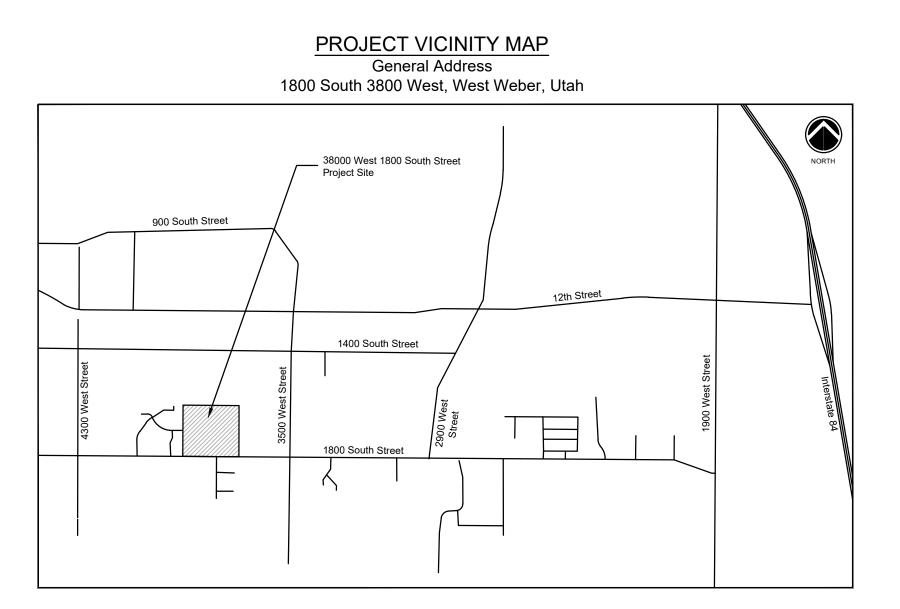
# CIVIL SITE CONSTRUCTION DRAWINGS FOR **STAGECOACH ESTATES SUBDIVISION**



WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS		SITE BOUNDARY & TOPOGRAPH Boundary Consultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 David E. Hawkes, PLS Utah No. 3		
	DATE	SURVEY / SUBMITTAL		
	1/03/2020	Site Boundary and Topographic Surve		
	3/4/2021	Weber County Surveyor's Record Plat		

# WEST WEBER, WEBER COUNTY, UTAH

Weber County Attorney:

I have examined the financial guarantee and other documents associated with this subdivision plat and in my opinion, they conform with the County Ordinance applicable thereto and now in force and affect.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

Signature

Weber County Engineer:

I hereby certify that the required public improvement standards and drawings for this subdivision conform with County standards and the amount of the financial guarantee is sufficient for the installation of these improvements.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_

Signature

Weber County Planning Commission approval:

This is to certify that this subdivision plat was duly approved by the Weber County Planning Commission on the \_\_\_\_\_ day of \_\_\_\_ 20\_\_\_\_.

Signature Chairman, Weber County Planning Commission

Weber County Commission acceptance:

This is to certify that this subdivision plat, the dedication of streets and other public ways and financial guarantee of public improvements associated with this subdivision, thereon are hereby approved and accepted by the Commissioners of Weber County, Utah this day of , 20

Signature Chairman, Weber County Commission

# **BASIS OF BEARING**

SOUTH QUARTER CORNER SECTION 21, T6N, R2W, SLBM, WEBER COUNTY SURVEY BRASS CAP MONUMENT (COORDINATE: 1,3700.05 NORTHING ,8661.82 EASTING)

SOUTH EAST CORNER SECTION 21, T6N, R2W, SLBM, WEBER COUNTY SURVEY BRASS CAP MONUMENT (COORDINATE: 2,3689.81 NORTHING,10242.36 EASTING)

BEARING: SOUTH 89 37' 43" EAST

# BENCHMARK

BM#1 WEBER COUNTY SURVEY BENCHMARK STAMPED 1954 ELEV: 4241.89' NEAR SOUTH EAST CORNER SECTION 21, T6N, R2W, SLBM



LYNC CONSTRUCTION

**DESIGNER / ENGINEER** 

TERREX ENGINEERING & CONSTRUCTION, LLC HAL CHRISTENSEN, SE, PE Utah No. 168487 272 EAST 3000 NORTH NORTH OGDEN, UTAH 84414 CELL (801) 448-9647

IC SURVEY s (801) 729-1569	SUPROFESSIONAL SE	La	and Development - Public	ering & Construction, LLC Works - Water & Wastewater Utilities den, UT 84412 (801) 458-9647	40.0 Acre -
56548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Constru
	1× × 4/27/2/	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 180
	STATE OF UTAN	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bounda
ey .		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Constru
		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

# Construction Liability Disclaimer

The preparation of the attached Construction Drawings for the Stagecoach Estates residential subdivision was completed in accordance with terms and conditions as established in a Professional Services Agreement (Agreement) between Lync Construction and Terrex Engineering & Construction, LLC (Terrex) dated 12/26/2019. The Agreement excluded any and all obligations on the part of Terrex to inspect any site construction work by a general contractor and general contractor's subcontractors to complete all site improvements as shown on the attached Construction Drawings. Therefore, Terrex assumes no liability or responsibility for any and all construction work that does not meet construction standards and specifications as administered by Weber County, Weber Fire District, Taylor West Weber Water Improvement District, Hooper Irrigation Company, Central Weber Sewer District, State of Utah Divisions of Environmental Quality and Drinking Water. Both Terrex and Lync Construction acknowledge that approval of the attached Construction Drawings by Weber County attests to the accuracy and constructability of all engineering as shown on said Construction Drawings.

In agreement:

Terrex Engineering & Construction, LLC by

this \_\_\_\_\_ day of \_\_\_\_\_ , 2021

E. Hal Christensen, SE, PE President & Corporate Engineering Manager

Lync Construction by

Name & Title

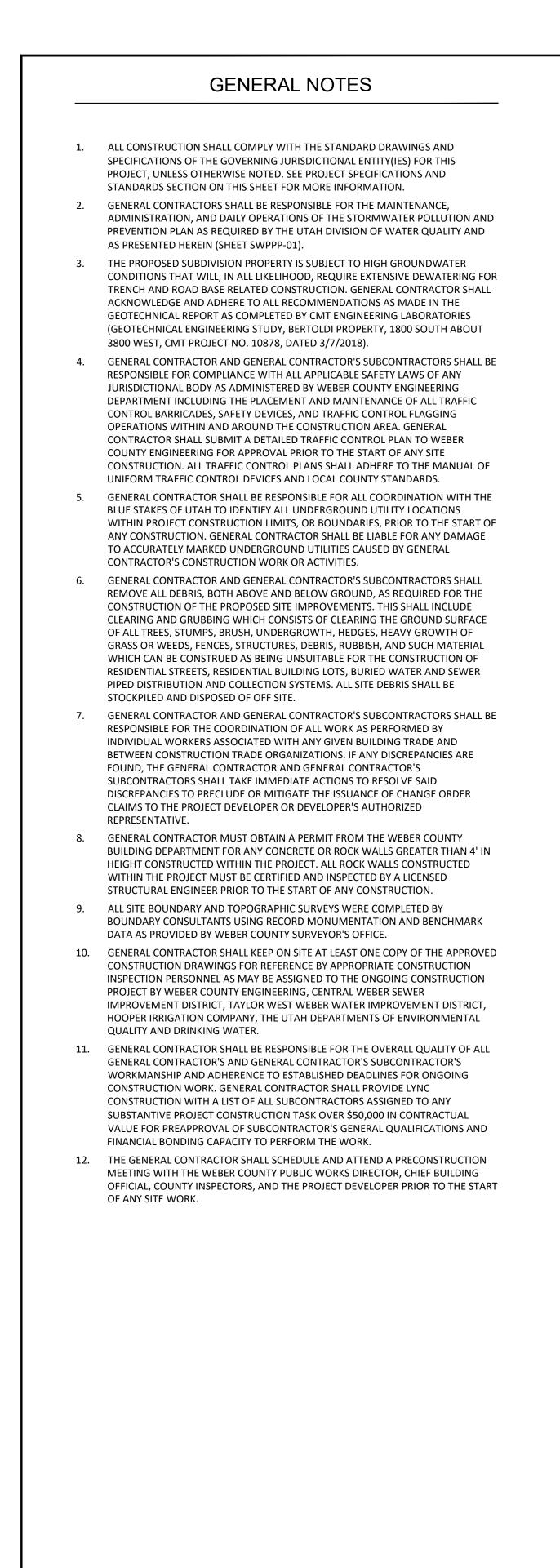
this \_\_\_\_\_ day of \_\_\_\_\_ , 2021

Signature

# SHEET INDEX

GEN-01	Cover	PP-09	1800 South Storm Drain STA 10+00 to 13+00
GEN-02	General Design & Construction Notes	PP-10	Detention Basin & Storm Drainage Outfall
GEN-03	Legend & Abbreviations	PP-11	3800 West Sanitary Sewer STA 0+00 to 6+00
GEN-04	TWWWID Construction Specifications	PP-12	3800 West Sanitary Sewer STA 5+00 to 9+80
GEN-05	TWWWID Construction Specifications	PP-13	1700 South Sanitary Sewer STA 0+00 to 5+00
GEN-06	TWWWID Construction Specifications	PP-14	1750 South Sanitary Sewer STA 5+00 to 11+00
GEN-07	TWWWID Construction Specifications	PP-15	1750 South Sanitary Sewer STA 10+00 to 15+00
GEN-08	TWWWID Construction Specifications	PP-16	1800 South Sanitary Sewer STA 0+00 to 6+00
PP-01	Plan & Profile Sheet Index	PP-17	1800 South Sanitary Sewer STA 5+00 to 11+00
PP-02	3800 West Storm Drain STA 0+00 to 6+00	PP-18	1800 South Sanitary Sewer STA 10+00 to 13+00
PP-03	3800 West Storm Drain STA 5+00 to 9+80	SWP-01	Stormwater Pollution & Prevention Plan
PP-04	1700 South Storm Drain STA 0+00 to 5+00	CD-01	Site Civil Details
PP-05	1750 South Storm Drain STA 5+00 to 11+00	CD-02	Site Civil Details
PP-06	1750 South Storm Drain STA 10+00 to 15+00	CD-03	Site SWPPP Details
PP-07	1800 South Storm Drain STA 0+00 to 6+00	CD-04	Street Section Details
PP-08	1800 South Storm Drain STA 5+00 to 11+00	CD-05	TWWWID Pressure Water-Line Details
		CD-06	TWWWID Pressure Water-Line Details

Stagecoach Estates - 56 Lot Residential Development		COVER	
struction			
1800 South 3800 West, West Weber, Utah			
ndary Consultants / David E. Hawkes, PLS	SHEET	GEN-01	
struction Approval: Weber County Engineering			



# CULINARY AND SECONDARY WATER

- 1. UNLESS PRESENTED OTHERWISE ON THE ATTACHED CONSTRUCTION DRAWINGS, ALL CULINARY AND SECONDARY WATER LINES, INCLUDING PRESSURE PIPE, FLOW CONTROL VALVES, PIPING APPURTENANCES, TRENCHING AND BACKFILL REQUIREMENTS, THRUST BLOCKING, ETC. SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH CONSTRUCTION STANDARDS, PROCEDURES, DETAILS, AND SPECIFICATIONS AS ADMINISTERED AND APPROVED OF BY TAYLOR WEST WEBER WATER IMPROVEMENT DISTRICT AND HOOPER IRRIGATION COMPANY. SAID CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE ATTACHED AND MADE A PART OF THESE CONSTRUCTION DRAWINGS.
- ALL PRESSURE WATERLINES SHALL BE WATER PRESSURE TESTED AT 200 PSI FOR 2 2. HOURS WITH ALL WATERLINES FILLED WITH CHLORINATED WATER. CHLORINATED WATER SHALL HAVE 50 PPM CHLORINE AND SHALL REMAIN IN ALL PRESSURE WATERLINES FOR A MINIMUM OF 24 HOURS INCLUDING THE 2 HOURS OF PRESSURE TESTING. AFTER THE 24 HOURS, ALL PRESSURE WATERLINES SHALL BE FLUSHED WITH A MINIMUM OF TWO SAMPLE BACTERIA TESTS TAKEN WITH RESULTS PASSING THE UTAH CODE R309-100 AND AWWA C651-14 STANDARS FOR DISINFECTION OF PUBLIC WATER MAINS. ALL TESTING SHALL BE COMPLETED IN ACCORDANCE WITH TAYLOR WEST WEBER WATER IMPROVEMENT DISTRICT SPECIFICATION AS ATTACHED AND MADE A PART OF THESE CONSTRUCTION DRAWINGS. 1" SECONDARY WATER METER SETTERS SHALL BE INSTALLED AT ALL RESIDENTIAL
- SERVICE CONNECTIONS WITHIN METER BOXES MARKED "IRRIGATION." 4. UNLESS PRESENTED OTHERWISE ON THE ATTACHED CONSTRUCTION DRAWINGS, ALL FIRE HYDRANTS SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH CONSTRUCTION STANDARDS, PROCEDURES, DETAILS, AND SPECIFICATIONS AS ADMINISTERED AND APPROVED OF BY THE WEBER COUNTY FIRE MARSHALL.
- 5. ALL ABANDON PRESSURE WATER LINES SHALL BE LEFT IN PLACE ON APPROVAL OF THE WEBER COUNTY ENGINEERING DEPARTMENT.
- 6. ALL CULINARY AND SECONDARY WATER LINES SHALL BE LAID IN PLACE WITH A 12 GAUGE COPPER LOCATOR WIRE WITH EXPOSED ENDS AT EACH VALVE BOX, SERVICE CONNECTION, OR FIRE HYDRANT.

# STORM DRAIN AND SANITARY SEWER

- 1. UNLESS PRESENTED OTHERWISE ON THE ATTACHED CONSTRUCTION DRAWINGS, ALL STORM DRAIN AND SANITARY SEWER PIPING, PIPING APPURTENANCES, INCLUDING MANHOLES, TRENCHING AND BACKFILL REQUIREMENTS, ETC. SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH CONSTRUCTION STANDARDS, PROCEDURES, DETAILS, AND SPECIFICATIONS AS ADMINISTERED AND APPROVED OF BY WEBER COUNTY ENGINEERING DEPARTMENT AND CENTRAL WEBER SEWER IMPROVEMENT DISTRICT.
- 2. SANITARY SEWERS SHALL BE MANDREL AND AIR TESTED IN ACCORDANCE WITH ASTM D2321 AND F1417 STANDARDS RESPECTIVELY.

# POWER

- POWER SERVICE TO THE PROJECT SUBDIVISION SHALL BE DONE BY ROCKY MOUNTAIN POWER OR SUBCONTRACTOR APPROVED BY ROCKY MOUNTAIN POWER. GENERAL CONTRACTOR TO FOLLOW ALL BLUE STAKES OF UTAH PROTOCOLS TO SAFELY LOCATE AND WORK AROUND EXISTING HIGH VOLTAGE POWER LINES. GENERAL CONTRACTOR REQUIRED TO CONTACT ROCKY MOUNTAIN POWER A MINIMUM OF 30 DAYS PRIOR TO THE START OF ANY SITE CONSTRUCTION WORK
- 1. PLACEMENT OF HIGH VOLTAGE ELECTRICAL POWER LINES TO PROVIDE ELECTRICAL 3
- INCLUDING THE COORDINATION OF ALL WORK TO INSTALL POWER SERVICE TO INDIVIDUAL SUBDIVISION BUILDING LOTS.
- 4. ANY ELECTRICAL DESIGN WORK REQUIRED TO MAKE UPGRADED RESIDENTIAL SERVICE CONNECTIONS SHALL BE PERFORMED BY A LICENSED ELECTRICAL ENGINEER EMPLOYED BY ROCKY MOUNTAIN POWER OR BY A CONSULTANT AS APPROVED BY ROCKY MOUNTAIN POWER.
- 5. ANY REQUIRED CHANGES TO THE EXISTING ELECTRICAL POWER DISTRIBUTION SYSTEM TO PROVIDE ELECTRICAL POWER SERVICE TO THE PROJECT SUBDIVISION SHALL BE DONE BY ROCKY MOUNTAIN POWER OR A SUBCONTRACTOR SELECTED BY ROCKY MOUNTAIN POWER.

# NATURAL GAS

- 1. PLACEMENT OF HIGH-PRESSURE NATURAL GAS LINES TO PROVIDE NATURAL GAS SERVICE TO THE PROJECT SUBDIVISION SHALL BE DONE BY DOMINION ENERGY OR SUBCONTRACTOR APPROVED BY DOMINION ENERGY.
- CONTRACTOR NEEDS TO CONTACT DOMINION ENERGY'S MARKETING DEPARTMENT, 30 DAYS PRIOR TO ANY CONSTRUCTION WORK, TO SIGN UP FOR INDIVIDUAL RESIDENTIAL BUILDING LOT GAS SERVICE.
- 3. CONTRACTOR WILL BE RESPONSIBLE TO CONDUCT TRENCH BACKFILL COMPACTION TESTS FOR ALL BURIED GAS LINE INSTALLATIONS AT DEVELOPERS EXPENSE.
- 4. AT THE RECOMMENDATION OF DOMINION GAS ENGINEERING STAFF, HIGH PRESSURE NATURAL GAS LINE STEEL PIPE CASINGS OR CONDUITS WILL BE PLACE AT HEAVY WHEEL LOAD STREET OR HIGHWAY CROSSINGS AT THE DEVELOPER'S EXPENSE.
- RESIDENTIAL BUILDING LOT PROPERTY LINES AND GRADE ELEVATIONS MUST BE STAKED BY DEVELOPER BEFORE GAS WILL BE INSTALLED.
- 6. ALL WATER, SEWER AND STORM DRAIN PIPE LINES IN ADDITION TO LOT DRAINAGE CULVERTS IN CONFLICT WITH THE ALIGNMENT OF A HIGH-PRESSURE NATURAL GAS LINES SHALL BE STAKED BY DEVELOPER.
- ANY FAILURE TO COMPLY WITH THE ABOVE REQUIREMENTS WILL CAUSE EXTENDED DELAYS IN THE PLACEMENT OF NATURAL GAS SERVICE LINES WITH NO EXCEPTIONS. 8. GENERAL CONTRACTOR SHALL CONTACT DOMINION ENERGY A MINIMUM OF TWO WEEKS PRIOR TO SCHEDULING THE INSTALLATION OF NATURAL GAS LINES AND SUBSEQUENT TO THE COMPLETE INSTALLATION OF ALL BURIED ELECTRICAL POWER CABLES, PLACEMENT OF STREET SUBBASE MATERIALS TO WITHIN 6" OF FINISH GRADE FOR PLACEMENT OF ASPHALT PAVING MATERIALS, AND THE 10' UTILITY
- EASEMENT INSIDE THE STREET RIGHT-OF-WAY LINE IS GRADED TO TOP EDGE OF PAVEMENT ELEVATION.

WEBER COUNTY ENGINEERING DEPARTMENT	SITE BOUNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 (801) 729-1569	EDWINH.	Terrex Engineering & Construction, LLC Land Development - Public Works - Water & Wastewater Utilities P.O. Box 13059 Ogden, UT 84412 (801) 458-9647			40.0 Acre
FINAL SET APPROVED CONSTUCTION DRAWINGS	David E. Hawkes, PLS Utah No. 356548		DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Co
		XX 4/27/21	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS
	DATE SURVEY / SUBMITTAL	STATE OF UTAH	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: BO
	1/03/2020 Site Boundary and Topographic Survey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Co
	3/4/2021 Weber County Surveyor's Record Plat		4/30/2021		Construction Ready Submittal	

**GRADING AND DRAINAGE NOTES** 

# UTILITY CONTACTS

- RUNOFF CAPACITIES FOR THE STORM DRAIN PIPING SYSTEM, AS SHOWN ON THE ATTACHED CONSTRUCTION DRAWINGS, WERE DETERMINED USING THE NRCS/SCS TR-55 MODEL FOR RESIDENTIAL DEVELOPMENTS OF 40 ACRES OR MORE.
- PROJECT STREET DESIGN REQUIREMENTS WERE ESTABLISHED BY CMT ENGINEERING LABORATORIES. REFERENCE THEIR GEOTECHINAL STUDY "BERTOLDI PROPERTY 1800 SOUTH ABOUT 3900 WEST, WEST WEBER, UTAH, CMT PROJECT NO. 10878 DATED 3/7/2018. ALL GRADING OPERATIONS, SITE PREPARATIONS, SCARIFICATION OF EXISTING GROUND SURFACES, UTILITY TRENCH EXCAVATION, ROAD-BASE EXCAVATION, PLACEMENT AND COMPACTION OF STRUCTURAL ROAD-BASE, ANY SITE DEWATERING OPERATIONS TO MITIGATE HIGH GROUNDWATER CONDITIONS, SHALL BE DONE AND COMPLETED IN STRICT ACCORDANCE WITH RECOMMENDATIONS STATED IN THE ABOVE-CITED CMT GEOTECHNICAL STUDY.
- GENERAL CONTRACTOR SHALL NOTIFY LYNC CONSTRUCTION IMMEDIATELY IN THE EVENT OF A CONFLICT OR IRREGULARITY WITH EXISTING SOIL CONDITIONS IMPACTING ANY ONGOING CONSTRUCTION OPERATIONS AS DOCUMENTED IN THE ABOVE-CITED CMT GEOTECHNICAL STUDY.
- INDIVIDUAL RESIDENTIAL BUILDING LOT OWNERS ARE RESPONSIBLE FOR THE 4. GRADING OF THEIR INDIVIDUAL LOTS IN PERPETUITY INCLUDING ALL GRADING TO DRAIN INDIVIDUAL LOTS TO DISCHARGE STORM RUNOFF TO THE RESIDENTIAL STREET DRAIN DITCH FRONTING THEIR PROPERTY. THE GRADING OF INDIVIDUAL RESIDENTIAL LOTS MAY BE DONE IN ACCORDANCE WITH HOMEOWNER ASSOCIATION REQUIREMENTS OR WEBER COUNTY BUILDING CODE.
- GENERAL CONTRACTOR SHALL SECURE APPROVAL OF STREET SUBBASE AND 5. PAVEMENT MATERIALS FROM CMT ENGINEERING LABORATORIES 30 DAYS PRIOR TO THE PLACEMENT OF SAID MATERIALS.
- GENERAL CONTRACTOR SHALL COMPLETE ALL EXCAVATIONS, SITE SURFACE 6. GRADING, PLACEMENT OF IMPORTED FILL MATERIALS, ALLOWING FOR SCHEDULED INSPECTIONS BY CMT ENGINEERING LABORATORIES INCLUDING THE TAKING OF MATERIAL SAMPLES FOR LABORATORY EVALUATIONS AND SITE COMPACTION TESTS OF PLACED SOIL AND PAVEMENT MATERIALS. GENERAL CONTRACTOR SHALL COORDINATE ALL SITE INSPECTIONS AND MATERIAL TESTING OPERATIONS WITH WEBER COUNTY ENGINEERING DEPARTMENT INCLUDING PROVIDING ALL CERTIFIED TESTING RESULTS TO LYNC CONSTRUCTION AND WEBER COUNTY ENGINEERING DFPARTMENT.
- GENERAL CONTRACTOR SHALL GIVE NOTICE TO CMT ENGINEERING LABORATORIES (CMT) OF ALL UTILITY TRENCHING AND BACKFILL OPERATIONS IN ADDITION TO STREET SUBGRADE ROUGH GRADING OPERATIONS A MINIMUM OF 48 HOURS IN ADVANCE OF SAID OPERATIONS. CMT WILL PROVIDE SITE INSPECTIONS TO EVALUATE THE STABILITY OF ALL UNDERGROUND UTILITY TRENCHING OPERATIONS INCLUDING THE EFFECTIVENESS OF ANY TRENCH AND SUBGRADE DEWATERING EFFORTS.
- GENERAL CONTRACTOR SHALL ENFORCE FEDERAL AND STATE SWPPP REQUIREMENTS AND REGULATIONS TO MITIGATE EXCESSIVE SEDIMENT RUNOFF FORM THE OVERALL CONSTRUCTION SITE IN ACCORDANCE WITH THE ATTACHED STORM WATER POLLUTION PREVENTION PLAN. CONTRACTOR SHALL ALSO MAKE EVERY EFFORT TO FURTHER MITIGATE EXCESSIVE DUST AND TO MAINTAIN ALL CONSTRUCTION ACCESS ROADS FREE OF MUD HOLES, RUTS, AND CONSTRUCTION DEBRIS.
- CMT ENGINEERING LABORATORIES SHALL SUBMIT A FINAL SOILS GRADING AND 9. CONSTRUCTION STUDY TO WEBER COUNTY ENGINEERING DEPARTMENT AND LYNC CONSTRUCTION TO CONFIRM THAT ALL CONSTRUCTION OPERATIONS WERE COMPLETED IN CONFORMANCE WITH THE RECOMMENDATIONS AND CONSTRUCTION REQUIREMENTS GIVEN IN THEIR ABOVE-CITED 2018 STUDY.

TAYLOR WEST WEBER WATER IMPROVEMENT DISTRICT 2815 WEST 3300 SOUTH WEST HAVEN, UT 84401 (801) 731-1668

RYAN ROGERS, GENERAL MANAGER

HOOPER IRRIGATION COMPANY 5375 SOUTH 5500 WEST HOOPER, UT 84315 (801) 388-3956

DENNIS FLINDERS, SECONDARY WATER MANAGER

CENTRAL WEBER SEWER DISTRICT 2618 WEST PIONEER ROAD OGDEN, UT 84404 (801) 731-3011 LANCE WOODS, GENERAL MANAGER

WEBER COUNTY FIRE DISTRICT 2023 WEST 1300 NORTH FARR WEST, UT 84404 (801) 782-3580 BRANDON J. THUESON, FIRE MARSHAL

UTAH DIVISION OF ENVIRONMENTAL QUALITY 195 NORTH 1950 WEST SALT LAKE CITY, UT 84116 (801) 536-4123

WEBER COUNTY ENGINEERING DEPARTMENT

2380 WASHINGTON BLVD SUITE 240 OGDEN, UT 84401 (801) 399-8374

UTAH DIVISION OF DRINKING WATER 195 NORTH 1950 WEST SALT LAKE CITY, UT 84116 (801) 536-4400

> ROCKY MOUNTAIN POWER 1438 WEST 2550 SOUTH OGDEN, UT 84401 (866) 221-7070

> > Stagecoach Estates re - 56 Lot Residential Development

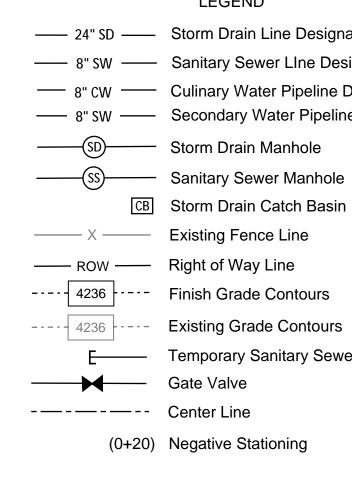
onstruction 1800 South 3800 West, West Weber, Utah oundary Consultants / David E. Hawkes, PLS onstruction Approval: Weber County Engineering

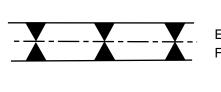
**GENERAL DESIGN & CONSTRUCTION NOTES** 

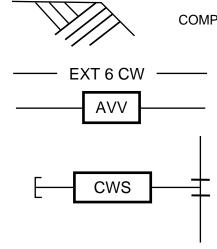


CRD-01 CRD-02 CRD-03 CRD-04 CRD-05 CRD-06	POINT OF INTERSECTION 1800 SOUTH STREET AND 3800 WEST STREETPOINT OF INTERSECTION 1700-1750 SOUTH STREET AND 3800 WEST STREET STA 6+48.003800 WEST STREET CENTERLINE STAT 9+79.90 END STREET1700-1750 SOUTH STREET CENTERLINE STAT 0+00POINT OF CURVE 1700-1750 SOUTH STREET CENTERLINE STA 2+73.50	PP-02 PP-03 PP-03 PP-04	3698.772 4347.139 4678.635 4348.863	88 88 88
CRD-03 CRD-04 CRD-05 CRD-06	3800 WEST STREET CENTERLINE STAT 9+79.90 END STREET 1700-1750 SOUTH STREET CENTERLINE STAT 0+00	PP-03 PP-04	4678.635	
CRD-04 CRD-05 CRD-06	1700-1750 SOUTH STREET CENTERLINE STAT 0+00	PP-04		88
CRD-05 CRD-06			4348 863	
CRD-06	POINT OF CORVE 1700-1750 SOUTH STREET CENTERLINE STA 2+73.50		_	88
	POINT OF TANGENCY 1700-1750 SOUTH STREET CENTERLINE STA 3+75.00	PP-04 PP-04	4346.528 4345.584	89 90
CRD-07	POINT OF TANGENET 1700-1750 SOUTH STREET CENTERLINE STA 3+75.00 POINT OF CURVE 1700-1750 SOUTH STREET CENTERLINE STA 4+78.50	PP-04	4264.178	90
CRD-08	POINT OF CURVE 1700-1750 SOUTH STREET CENTERLINE STA 6+45.25	PP-05	4140.481	92
CRD-09	22.5 BEND IN WATER MAIN STA 6+98.00	PP-05	4112.612	92
CRD-10	22.5 BEND IN WATER MAIN STA 6+98.00	PP-05	4107.957	92
CRD-11	POINT OF TANGENCY 1700-1750 SOUTH STREET CENTERLINE STA 7+48.75	PP-05	4058.885	930
CRD-12	POINT OF CURVE 1700-1750 SOUTH STREET CENTERLINE STA 8+52.50	PP-05	4058.171	94
CRD-13	1700-1750 SOUTH STREET CENTERLINE STAT 14+22.31 END STREET	PP-06	4054.479	99
CRD-14	1800 SOUTH STREET CENTERLINE STAT 0+00	PP-06	3700.052	866
				867
				886
				917
				939
				998
				997
CRD-21	18" STEEL FLOWLINE ON DETENTION POND INLET STRUCTURE	PP-10		909
CRD-23	18" STEEL FLOWLINE ON DETENTION POND OUTLET STRUCTURE	PP-10	3918.391	911
CRD-24	SSMH - 13	PP-18	3736.581	997
CRD-25	SSMH - 12	PP-18	3738.439	966
CRD-26	SSMH - 11	PP-17	3741.048	923
CRD-27	SSMH - 1	PP-16	3743326	885
	SDMH - 3	PP-14	4228.948	915
				913
				927
				926
				937 937
				935
				935
CRD-36				907
CRD-37	SSMH - 5	PP-13	4329.332	900
CRD-38	SSMH - 3	PP-12	4339.196	885
CRD-39	SSMH - 5	PP-11	4676.142	885
CRD-40	SDMH - 5	PP-11	4038.752	884
				885
				884
				885
				968
				998 935
CKD-40	JUDITIEND OF WALKING TRAIL AT 1000 JUDITI STREET	PP-08	3120.392	935
	CRD-10         CRD-11         CRD-12         CRD-13         CRD-14         CRD-15         CRD-16         CRD-17         CRD-18         CRD-19         CRD-20         CRD-21         CRD-22         CRD-23         CRD-24         CRD-25         CRD-26         CRD-27         CRD-28         CRD-29         CRD-30         CRD-31         CRD-33         CRD-34         CRD-35         CRD-36         CRD-37         CRD-38         CRD-38         CRD-38         CRD-38	CRD-10         22.5 BEND IN WATER MAIN STA 6+98.00           CRD-11         POINT OF TANGENCY 1700-1750 SOUTH STREET CENTERLINE STA 7+48.75           CRD-12         POINT OF CURVE 1700-1750 SOUTH STREET CENTERLINE STA 8+52.50           CRD-13         1700-1750 SOUTH STREET CENTERLINE STAT 14+22.31 END STREET           CRD-14         1800 SOUTH STREET CENTERLINE STAT 14+22.31 END STREET           CRD-15         CCV-1 CAST IN PLACE STORM DRAIN           CRD-16         CCV-1 CAST IN PLACE STORM DRAIN           CRD-17         CCV-2 CAST IN PLACE STORM DRAIN           CRD-18         CCV-3 CAST IN PLACE STORM DRAIN           CRD-20         1800 SOUTH STREET CENTERLINE STAT 13+21+.81           CRD-21         42" RCP PIPE ENTERING IN TO STORM DRAIN           CRD-22         18" STEEL FLOWLINE ON DETENTION POND INLET STRUCTURE           CRD-23         18" STEEL FLOWLINE ON DETENTION POND OUTLET STRUCTURE           CRD-24         SSMH - 13           CRD-25         SSMH - 14           CRD-26         SSMH - 13           CRD-27         SSMH - 1           CRD-28         SDMH - 2           CRD-30         SDMH - 2           CRD-31         SSMH - 1           CRD-33         SDMH - 1           CRD-34         SSMH - 6           CRD-35         BE	CRD-10         22.5 BEND IN WATER MAIN STA 6+98.00         PP-05           CRD-11         POINT OF TANGENCY 1700-1750 SOUTH STREET CENTERLINE STA 7+48.75         PP-05           CRD-12         POINT OF CLRVET 1700-1750 SOUTH STREET CENTERLINE STA 8+52.50         PP-06           CRD-13         1700-1750 SOUTH STREET CENTERLINE STA 14+22.31 END STREET         PP-06           CRD-14         1800 SOUTH STREET CENTERLINE STAT 10-00         PP-07           CRD-15         CCV-1 CAST IN PLACE STORM DRAIN         PP-07           CRD-16         POINT OF INTERSECTION 1800 SOUTH STREET AND 3800 WEST STREET         PP-07           CRD-17         CCV-2 CAST IN PLACE STORM DRAIN         PP-07           CRD-18         CCV-3 CAST IN PLACE STORM DRAIN         PP-09           CRD-19         CCV-3 CAST IN PLACE STORM DRAIN         PP-09           CRD-14         200 SOUTH STREET CENTERLINE STAT 13+21+.81         PP-09           CRD-21         28" STEEL FLOWLINE ON DETENTION POND INLET STRUCTURE         PP-10           CRD-22         18" STEEL FLOWLINE ON DETENTION POND INLET STRUCTURE         PP-18           CRD-25         SSMH + 11         PP-14         PP-14           CRD-26         SSMH + 3         PP-14         PP-14           CRD-27         SSMH + 3         PP-14         PP-14	CRD-10         22.5 BEND IN WATER MAIN STA 6+98.00         PP-05         4107.957           CRD-11         POINT OF TANGENCY 1700-1750 SOUTH STREET CENTERLINE STA 7+48.75         PP-05         4058.85           CRD-12         POINT OF TANGENCY 1700-1750 SOUTH STREET CENTERLINE STA 8+52.50         PP-05         4058.171           CRD-13         1700-1750 SOUTH STREET CENTERLINE STA 14+22.31 END STREET         PP-06         4054.479           CRD-14         1800 SOUTH STREET CENTERLINE STA 14+22.31 END STREET         PP-07         3728.325           CRD-15         CCV-1 CAST IN PLACE STORM DRAIN         PP-07         3728.621           CRD-16         POINT OF INTERSECTION 1800 SOUTH STREET AND 3800 WEST STREET         PP-07         3728.632           CRD-16         CCV-2 CAST IN PLACE STORM DRAIN         PP-09         3719.874           CRD-20         1800 SOUTH STREET CENTERLINE STAT 13+21+.81         PP-09         3722.683           CRD-21         42" RCP PIPE ENTERING IN TO STORM DRAIN         PP-09         3702.683           CRD-23         18" STEEL FLOWLINE ON DETENTION POND INLET STRUCTURE         PP-10         4021.425           CRD-23         18" STEEL FLOWLINE ON DETENTION POND OUTLET STRUCTURE         PP-14         3736.581           CRD-24         SSMH + 13         PP-14         3736.581         229.585

WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS	5554 West	DUNDARY & TOPOGRAPHI Boundary Consultants Professional Land Surveyors 2425 North, Hooper, UT 84315 avid E. Hawkes, PLS Utah No. 3
	DATE	SURVEY / SUBMITTAL
	1/03/2020	Site Boundary and Topographic Surve
	3/4/2021	Weber County Surveyor's Record Plat







Civil Detail Call-Out

Cross-Section Detail Call-Out

Coordinate Call-Out

HIC SURVEY ors 5 (801) 729-1569		La	40.0 Acre -		
356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Const
	1× × 4/27/21	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18
	TATE OF UTAN	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bound
vey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Const
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

# LEGEND

# — 24" SD — Storm Drain Line Designation

- 8" SW Sanitary Sewer Line Designation ----- 8" CW ----- Culinary Water Pipeline Designation
- 8" SW Secondary Water Pipeline Designation

  - E------ Temporary Sanitary Sewer Line Plug
  - (0+20) Negative Stationing

4X4 BC-SD 4'X4' STORM DRAIN BOX CULVERT

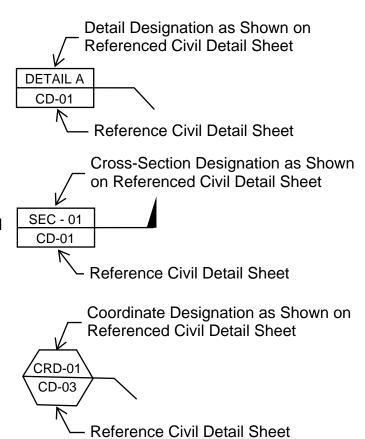
EXISTING OPEN DRAINAGE CHANNELL W/ TOP OF BANK, FLOWLINE/CENTERLINE AND SIDE SLOPE DESIGNATION

COMPACTED IMPORTED FILL TO GRADE LINE

- EXT 6 CW Existing Culinary Water Pipeline Designation
  - Air & Vacuum Valve Vault

Culinary Water Meter & Service Connection

# DETAIL REFERENCE



ABBREVIATIONS

SDMH-I 4240.66: Storm Drain Manhole Pipe Inlet Flow Line Elevation SDMH-O 4240.51: Storm Drain Manhole Pipe Outlet Flow Line Elevation SSMH-I 4237.52: Sanitary Sewer Manhole Inlet Flow Line Elevation SSMH-O 4237.15: Sanitary Sewer Manhole Outlet Flow Line Elevation TEOP: Top Edge of Street Pavement CB-1: Storm Drain Catch-Basin Call-Out VPC: Vertical Curve-Point of Curve VPI: Vertical Curve-Point of Tangent Line Intersection VPT: Vertical Curve-Point of Tangent SDR-35: PVC Gravity Flow Sanitary Sewer Pipe C900: PVC Pressure Flow Culinary and Secondary Water Pipe

Stagecoach Estates - 56 Lot Residential Development

# LEGEND & ABBREVIATIONS

**GEN-03** 

struction 1800 South 3800 West, West Weber, Utah undary Consultants / David E. Hawkes, PLS struction Approval: Weber County Engineering

# TAYLOR WEST WEBER WATER IMPROVEMENT DISTRICT CONSTRUCTION SPECIFICATIONS

SECTION 5 – SITE WORK REQUIREMENTS

# SECTION 5.1

PIPELINE TRENCH EXCAVATION AND BACKFILL

5.1.1DESCRIPTION: The CONTRACTOR shall furnish all labor, materials, tools and equipment, and perform all work necessary to complete required excavations and backfills. Work shall also include required grading for completion of water lines and associated appurtenances all in accordance with the Drawings and these specifications.

The work shall include: clearing the site; loosening, loading, removing, transporting and disposing of materials, wet and dry, necessary for construction; sheeting and bracing; draining and dewatering; backfill of trenches, excavations, and pits; compaction, compaction testing, leveling, signing, detours, mobilization, and clean up.

### 5.1.2MATERIALS:

5.1.2.1PIPE FOUNDATION MATERIAL: Wherever the subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, where water must be drained to maintain a dry bottom for pipe installation, or where solid rock intrudes into the bottom of the trench, the subgrade shall be excavated to a minimum depth of 6 inches below pipe bedding and replaced with crushed rock or pit run gravel.

Gravel for pipe stabilization material shall be clean crushed rock or pit run gravel conforming to the following gradation:

Screen Percent Passing 3" 100 3/4" 5

The gravel material shall be deposited over the entire trench width and compacted by tamping, rolling, or other suitable methods. In addition, the material shall be graded to produce a uniform and continuous support for pipe bedding material or installed pipe as specified.

5.1.2.1 PIPE BEDDING MATERIAL: Pipe bedding is fill material in the pipe zone. The pipe zone is defined as the envelope area 6 inches below the bottom of the pipe to 12 inches above the top of the pipe, and any lateral area within 9 inches of any pipe, pipeline structure or appurtenance.

Pipe bedding material may be excavated or imported material consisting of loose earth and sand or gravel conforming to the following gradation specifications:

•PIPE BEDDING MATERIAL

	Screen	Percent Passing
(If Ductile Iron or Concrete Pipe)	1"	100
(If PVC or HDPE Pipe)	3/4"	100
	No. 4	85-95
	No. 30	20-30
	No. 200	5-15

5.1.2.3 SELECT BACKFILL MATERIAL: Select backfill material shall be granular, readily compactable and shall be free from alkali, salt, and petroleum products, roots, sod, limbs, and other vegetative matter, slag, cinders, ashes and rubbish, or other material that in the opinion of the ENGINEER may be objectionable.

Conforming to the following gradation specifications:

ScreenPercent Passing 6 inch100 No. 1050 max. No. 4030 max. No. 20015 max.

Material from excavation may be used if it will meet all requirements of select backfill, including compaction requirements as specified for type of surface improvement above trench.

5.1.3CONSTRUCTION:

5.1.3.1TRENCH EXCAVATION: Trench excavation shall be described as the excavation of quicksand, sand, crushed slag, clay, loam, earth, hardpan, boulder-clay, boulders, bituminous or gravel roadway surface, together with removal of old timber, railroad ties, stone-filled or stone abutments and piers, boundaries, concrete and stone masonry, and every other class of material.

5.1.3.2SOLID ROCK EXCAVATION AND BLASTING: Blasting will not be permitted, except by written permission from the ENGINEER on a case by case basis. If the CONTRACTOR seeks blasting permission, and is granted that permission by the ENGINEER, he must exercise great care and will be held responsible for and will assume all liability connected with the blasting and use of explosives. He will be liable for all damage to work on adjacent property, all injuries, lawsuits, complaints, and any other actual or alleged damages.

•BLASTING EXPERTS: Blasting shall be done only by experienced, qualified blasters. Blasting shall be done in accordance with the recommendations for best practice in Section 9 of AGC Manual of Accident Prevention in Construction and in accordance with the recommendations for best practice of the Institute of Makers of Explosives. Blasting shall comply with State and OSHA requirements.

•COVERED BLASTING: All blasting near dwellings must be covered with heavy mats to prevent flying rock fragments. No blasting shall be done within 15 feet of completed work.

•SAFETY RULES: The CONTRACTOR shall observe all safety rules for the handling of explosives, and in no case shall blasting caps be stored near the explosives. No blasting shall be done outside the regular working hours except with special approval.

 BLASTING NOT BID ITEM: Solid rock excavation is not a bid item. Should the CONTRACTOR choose to blast, the cost will be negotiated through a work directive and change order.

5.1.3.4TRENCH WIDTH: The trench shall be excavated such that the new pipe is always centered in the trench. The clear trench width at the horizontal diameter of the pipe must not be less than the outside diameter of the pipe plus 18 inches. The maximum clear width of trench at the top of the pipe must not be more than the outside diameter of the pipe plus 24 inches.

Backfill with earth under structures or valves will not be permitted. Any unauthorized excess excavation below the elevation indicated for foundation of any structures shall be backfilled in accordance with these specifications for "Select Backfill Material" and "Pipe Foundation Material", as appropriate, at the CONTRACTOR's expense.

5.1.3.5SHEETING, BRACING AND SHORING OF EXCAVATIONS: Excavations shall be sheeted, braced, and shored as required to support the walls of the excavations, to eliminate sliding and settling and as may be required to protect the workmen, the work in progress, and existing utilities, structures and improvements. All such sheeting, bracing, and shoring shall comply with the requirements of the Utah State Industrial Commission, Occupational Safety and Health Act (OSHA), and accident prevention and safety provisions of the contract.

The CONTRACTOR shall be fully responsible for the adequacy of methods and materials used in trench sheeting, bracing, shoring, and/or other systems provided to protect workmen. Injury to or death of workmen resulting from inadequate trench safety measures shall be the full and complete responsibility of the CONTRACTOR.

All damages resulting from lack of adequate sheeting, bracing and shoring shall be the responsibility of the CONTRACTOR, and the CONTRACTOR shall complete all necessary repairs or reconstruction at his own expense resulting from such damage.

Sheeting or shoring that does not extend below the centerline of the pipe may be removed at the discretion and responsibility of the CONTRACTOR after the trench backfill has been placed and compacted to a level 12 inches above the top of the pipe. Following removal of the sheeting or bracing, the trench shall be immediately backfilled and compacted.

5.1.3.6PIPE FOUNDATION AND BEDDING MATERIAL INSTALLATION: Pipe foundation and bedding material installation consists of preparing an acceptable pipe foundation, excavating the pipe groove in the prepared foundation and backfilling from the foundation to 12 inches above the top of the pipe. All piping shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded.

•PIPE FOUNDATION: Shall consist of undisturbed natural soil in the bottom of the trench, or a built-up foundation of bedding material if conditions and these specifications so warrant. Wherever the trench subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, and/or where groundwater must be drained, or where solid rock intrudes into the trench bottom the trench shall be excavated below the bottom of the pipe bedding approximately 6 inches, and filled with clean, compacted pipe foundation material.

•PIPE BEDDING FROM PIPE FOUNDATION TO 12 INCHES ABOVE TOP OF PIPE: Bedding material shall be deposited and compacted in layers not to exceed 8 inches in uncompacted depth. Deposition and compaction of bedding materials shall be done simultaneously and uniformly on both sides of the pipe. All bedding materials shall be placed in the trench with hand tools or other approved method in such a manner that they will be scattered alongside the pipe and not dropped into the trench in compact masses.

•PIPE GROOVE: A pipe groove shall be excavated in the pipe bedding material to receive the bottom quadrant of the pipe so that the installed pipe will be true to line and grade. Bell holes shall be dug after the trench bottom has been graded. Bell holes shall be excavated so that only the barrel of the pipe bears on the pipe foundation.

5.1.3.7TRENCH BACKFILL: The trench shall be backfilled from 12 inches above the top of the pipe to the bottom of the required surface improvement section indicated on the Drawings, with select backfill material. No bituminous pavement, concrete, rock, or other lumpy material may be used in the backfill unless these materials are scattered and do not exceed 6 inches in any dimension. Decomposable or vegetative material shall not be used in backfilling.

5.1.3.8EXCAVATED WASTE MATERIAL: All excess material shall be hauled away from the construction site and legally disposed of in an area obtained by the CONTRACTOR. The CONTRACTOR shall be responsible for all rights-of-way, easements, and access associated with the disposal of excess excavated material. The CONTRACTOR shall further be responsible to obtain permission from the property owner or person(s) controlling the property where the CONTRACTOR plans to dispose of excavated material. No separate compensation will be made to the CONTRACTOR for disposal of excess excavated material.

Excavated material shall be piled in a manner that will not endanger the work and will avoid obstructing sidewalks and driveways. Gutters and irrigation ditches shall be kept clear or other satisfactory provisions made for street drainage.

Grading of the area surrounding the trenches, including excavated materials, shall be performed as necessary to prevent surface water from flowing into trenches, or other excavations.

5.1.3.9COMPACTION: Compaction shall be the responsibility of the CONTRACTOR. He shall select the methods to be used and carefully perform the work of backfilling and compaction to prevent damage to new or existing piping. Any new or existing piping damaged during the CONTRACTOR's work shall be replaced as directed by the ENGINEER with new piping.

5.1.3.10COMPACTION TESTING: Compaction testing requirements called for herein are only minimum and are required for the purpose of indicating, during construction, the quality of materials and compaction. Dips or uneven surface caused by post settlement of any trenches, excavation, fill, or embankment that show up within the 1 year warranty period shall be repaired by the CONTRACTOR at no additional cost to the OWNER.

•MAXIMUM DENSITY: Maximum density as used in these specifications shall be defined as the maximum density obtained in the laboratory by an AASHTO T-

180 test. In place density of compacted backfill will be determined by use of nuclear density determining equipment.

tabulation:

Fill under structure95 Fill areas for pipeline construction95 Pipe bedding90

Trench backfill (Outside roadway right-of-way)90 Trench backfill (Inside roadway right-of-way)97

•COMPACTION CONFIRMATION: It shall be the responsibility of the CONTRACTOR to accomplish the specified compaction for backfill, fill, etc., and to control all earthwork operations by tests or other means approved by the ENGINEER to verify and confirm that the CONTRACTOR is complying at all times with the requirements of the specifications.

•INDEPENDENT TESTING: Material tests are required and shall be made by an independent testing laboratory hired and paid for by the entity commissioning the waterline installation, with primary responsibility for coordinating said testing being borne by the CONTRACTOR (e.g., if the District retains a contractor to install a waterline, the District will retain and pay for testing services; if a developer commissions the installation of a waterline, it will retain and pay for testing services; in either case, the contractor would be responsible for coordination with the testing service so that work may proceed at the contractor's coordination). In areas where compacted backfill material is specified for pipeline trenches or around structures, the following amounts of satisfactory field density tests are required:

•Street crossings, every 50 feet of crossing length, or portion thereof: 2 Tests per 50-foot segment (18" above top of pipe and top of subbase).

•Trenches running parallel to the roadway: 2 Tests per 500 feet (18" above top of pipe and top of subbase).

WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS	SITE BOUNDARY & TOPOGRAPH Boundary Consultants Professional Land Surveyor 5554 West 2425 North, Hooper, UT 84315 David E. Hawkes, PLS Utah No. 3
	DATE SURVEY / SUBMITTAL
	1/03/2020 Site Boundary and Topographic Surve

•COMPACTION PERCENTAGE: Unless otherwise specified, fills shall be compacted as indicated in the following

LocationPercent of Maximum Density Backfill adjacent to structure90

•PROCTOR TESTS: Earth material specified in this section having specific gradation requirements shall have a soil gradation and proctor analysis performed to verify compliance and used as a basis for compaction tests. The number of times each type of material shall be tested is as follows:

•When material is being imported: 1 Test per borrow site. 1 Additional test per material change.

•When native material is approved: 1 Test per geographical area where the composition and material gradation visually remains unchanged.

The term "test" shall mean a single test with acceptable results, i.e., equal to or greater than the specified minimums. In the event compaction tests results fall below the required minimum, the CONTRACTOR shall recompact and test the material until a test with acceptable results is obtained.

•TEST RESULTS: Copies of test results prepared by the independent testing laboratory will be transmitted to the CONTRACTOR at the same time they are transmitted to the ENGINEER.

Successful performance of field density tests by the independent testing laboratory at any given location shall not relieve the CONTRACTOR of his responsibility to meet the specified density and warranty requirements for the complete project.

Additional tests directed by the ENGINEER shall be made at locations selected by the ENGINEER.

5.1.3.11RESTORATION OF CONSTRUCTION SITE: During the progress of the Work, the CONTRACTOR shall clean up all construction debris, excess excavation, and excess materials, and shall restore all fences, irrigation structures, ditches, culverts, and similar items. The CONTRACTOR shall stockpile the excavated trench material so as to do the least damage to adjacent grassed areas, or fences, regardless of whether these are on private property or public rights-of-way. All excavated materials shall be removed from grassed and planted areas and these surfaces shall be left in conditions equivalent to their original surface and free from all rocks, gravel, boulders, or other foreign materials.

The roadway including shoulders, slopes, ditches, and borrow pits shall be smoothly trimmed, and shaped by machinery, or other satisfactory methods, to the lines, grades and cross-sections, as established, or to equal or better condition than that which existed before construction efforts started, and shall be so maintained until accepted. Any surplus material not suitable for spreading along the road to widen the existing shoulder or raise the grade shall be hauled away or disposed of.

5.1.3.12CONTRACTOR'S RESPONSIBILITY: The CONTRACTOR will be responsible to see that the backfilling, consolidation and compaction are properly and adequately done. Settlement of trenches within a period of one year after final acceptance of the project, or longer period, if so required by the entity from whom excavation/cut permits were obtained for completion of the Work, shall be considered incontrovertible evidence of inadequate compaction, and the CONTRACTOR shall be responsible for correcting the condition in accordance with the provisions of these Specifications, including the replacement of the surface materials.

5.1.4MEASUREMENT AND PAYMENT: As specified in Section 1.4 of the Contract Documents.

End of Section

SECTION 5.2

PLACEMENT, REMOVAL AND RESTORATION OF SURFACE IMPROVEMENTS

5.2.1DESCRIPTION: The CONTRACTOR shall be responsible for the protection and the restoration or replacement of any improvements existing on public or private property at the start of work or placed during the progress of the work. Surfacing material removed will be loaded, hauled and disposed of by the CONTRACTOR in approved disposal areas at no additional expense to the OWNER. Existing improvements shall include but not be limited to permanent surfacing, curbs, gutters, sidewalks, planted areas, ditches, driveways, culverts, fences, signing, and walls. All improvements shall be reconstructed to equal or better, in all respects than the existing improvements removed. Provide all signing, barricades, flagman or signals as necessary to provide safe travel to the public.

Procedures may vary from those given herein, if so directed in writing by the owner of the subject improvements, and not contradictory to the Owner's interests.

5.2.1.1 FIELD VERIFICATION OF IMPROVEMENTS: In submitting a bid, the CONTRACTOR will be deemed to have carefully examined the site of the work and to have acquainted himself with all conditions relating to the protection and restoration of existing improvements. The ENGINEER does not guarantee that all improvements are shown on the Drawings, and it shall be the CONTRACTOR's responsibility to provide in his bid for the protection and restoration of all existing improvements whether or not each is provided for specifically on the Drawings and/or Bid Form.

5.2.2MATERIALS:

5.2.2.1GRAVEL SURFACE: Material for use on gravel surfaces shall be obtained from sound, tough, durable gravel or rock meeting the following requirements for grading:

Sieve Size	Percent Passing
1-inch sieve	100
1/2-inch sieve	79 - 91
No. 4 sieve	49 - 61
No. 16 sieve	27 - 35
No. 200 sieve	ə 7-11

5.2.2.2UNTREATED BASE COURSE: Untreated base course shall be in accordance with Utah Department of Transportation Standard Specifications, 2012, Section 02721, Table 2:

### Table 2 Gradation Limits

Gradation Limit	S	
Sieve Size	Job Mix Gradation Target Band	Job Mix Gradation Tolerance
1½ inch	100	
1 inch	90-100	±9.0
¾ inch	70-85	±9.0
1∕₂ inch	65-80	±9.0
¾ inch	55-75	±9.0
No. 4	40-65	±7.0
No. 16	25 -40	±5.0
No. 200	7-11	±3.0

5.2.2.3SUBBASE MATERIAL: Subbase material gradation shall be in accordance with Utah Department of Transportation Standard Specifications, 2012, Section 02741, GRANULAR BORROW

A.Classification A-1-a. Refer to AASHTO M 145.

B.Non-plastic, well-graded, 3 inch maximum

		ta'				
SITE BOUNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 (801) 729-1569		EDWANN	La	and Development - Public	ering & Construction, LLC Works - Water & Wastewater Utilities den, UT 84412 (801) 458-9647	40.0 Acre -
	avid E. Hawkes, PLS Utah No. 356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Constr
		X 4/27/21	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18
DATE	SURVEY / SUBMITTAL	ATE OF UTAN	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bound
1/03/2020	Site Boundary and Topographic Survey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Constr
3/4/2021	Weber County Surveyor's Record Plat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	
			3			

struction

5.2.2.4BITUMINOUS SURFACE COURSE: Bituminous surface course gradation shall be in accordance with Utah Department of Transportation Standard Specifications, 2012, Section 02056, Table 6:. Actual gradation to be used shall be approved by the ENGINEER.

Table 6

	Aggregate	Gradations (	Percent Passi	ng by Dry Weight o	of Aggregate)
Sieve Size		1 inch	¾ inch	1/2 inch	¾ inch
<b>Control Sieves</b>	1½ inch	100.0			
	1 inch	90 - 100	100		
	¾ inch	<90	90 - 100	100	
	½ inch		<90	90 - 100	100
	¾ inch			<90	90- 100
	No. 4				< 90
	No. 8	19-45	23-49	28-58	32-67
	No. 200	1-7	2-8	2–10	2–10

5.2.2.5TACK COAT: Tack coat shall be SS-1 Diluted with an equal amount of water.

5.2.2.6CONCRETE: See Section 5.8 of these specifications.

5.2.2.7SOD AND VEGETATION: All materials shall be from sources approved by the ENGINEER; however, such approval does not relieve the CONTRACTOR from responsibilities for growth. maintenance and replacement as specified herein. When restoring damage from a pothole or trench in existing sod and vegetation, match the existing, surrounding materials.

5.2.2.8TOPSOIL: Topsoil shall be fertile, friable, natural loam, surface soil, reasonably free of clay lumps, brush, weeds, and other litter, and free of rocks, stumps, stones larger than 2 inches in any dimension, and other extraneous or toxic matter harmful to plant growth. Obtain topsoil only from naturally well-drained sites where topsoil occurs in a depth of not less than 4 inches. Do not obtain from bogs or marshes.

5.2.2.90THERS: Other materials may be required by the authorities having jurisdiction such as Local, State or Federal entities (e.g., irrigation company canals, city, county or state roads, Bureau of Reclamation canals). It is the Contractor's responsibility to ensure that the improvement owner's requirements are met.

# 5.2.3CONSTRUCTION:

5.2.3.1REMOVAL OF CONCRETE OR ASPHALT SURFACES: CONTRACTOR shall consult with the roadway owner before removing asphalt to ensure the requirements of the roadway owner will be met. Unless otherwise directed by the roadway owner, the following specification shall be adhered to. The pavement, sidewalk, curb and gutter, driveway, etc. shall be cut vertically along the lines forming the trench, or nearest full joint, in such a manner as to not cause damage to adjoining pavement, sidewalk, curb and gutter, driveway, etc. An undercut level at the rate of 1 inch per foot of thickness or an underlap joint shall be provided at the proposed junction between old and new surfaces. The portion to be removed shall be broken up in a manner that will not cause damage to the pavement or concrete outside the limits of the trench; however, any pavement damaged by operations outside the limits of the trench shall be replaced. Broken paying materials shall be removed immediately from the site of the work. The ENGINEER shall approve all saw cut locations.

5.2.3.2GRAVEL SURFACE: Where trenches are excavated through gravel surfaced areas such as roads and shoulders, parking areas, unpaved driveways, etc., the gravel surface shall be restored to a minimum depth of 4 inches. The gravel shall be placed in the trench at the time it is backfilled. The surface shall be maintained by blading, sprinkling, rolling, adding gravel, etc., to maintain a safe, uniform surface satisfactory to the ENGINEER. Excess material shall be removed.

# 5.2.3.3SUBBASE:

A.Finish granular borrow surface within  $\oplus$  0.1 ft of line and grade. B.Compact borrow and backfill material in 6 inch layers to the specified density per 5.1.3.10 of these specifications, unless noted otherwise on the Drawings.

5.2.3.4BASE COURSE AND TEMPORARY GRADED SURFACE: On paved areas, base course shall be placed in the top of the trench to a depth such that the final compacted thickness of the base course below the bottom of the pavement shall be equal to the existing base course but not less than 10 inches. This base course layer shall be brought flush with the paved surface and maintained in a smooth, rut free condition until time for the pavement to be placed.

5.2.3.4TACK COAT: Tack coat shall be applied at the rate of 0.05 to 0.15 gal/SY. A hand sprayer or brush shall be used to apply tack coat to vertical faces of previously constructed bituminous pavement (over 1/2 hour hence) prior to placing an adjacent or parallel pass, curbs, gutters, slab edges, and all structures to be in actual contact with the bituminous pavement. Tack coat shall also be applied uniformly at the same rate to the horizontal top surface of each lift of bituminous pavement prior to placing the next lift of bituminous pavement to promote a bond between the two courses of pavement. None of the material shall penetrate into the pavement and for this reason the application should be limited.

Prior to applying the material, the surface to be treated shall be swept or flushed free of dust or other foreign material. Protect all surfaces not required to receive tack coat from any inadvertent application.

The temperature range of the tack coat at the time of application shall be such that the viscosity will be between 50 and 100 centistokes as determined in accordance with ASTM Designation D-2710.

Under no circumstances shall traffic be permitted to travel over the tacked surface. If detours cannot be provided, restrict operation to a width that will permit at least one-way traffic over the remaining portion of the roadbed. If one-way traffic is provided, the traffic shall be controlled in accordance with governing authority.

After application of tack coat, sufficient time shall be given to allow for complete separation of asphalt and water before paving operations begin. The tack coat shall be applied on only as many surfaces as will be paved against in the same day.

# Stagecoach Estates - 56 Lot Residential Development

# TAYLOR WEST WEBER WATER DISTRICT CONSTRUCTION SPECIFICATIONS

1800 South 3800 West, West Weber, Utah Indary Consultants / David E. Hawkes, PLS struction Approval: Weber County Engineering



5.2.3.5 BITUMINOUS SURFACE: Trenches to be resurfaced shall be graded and rolled to provide a subgrade consisting of granular backfill and base course which is firm and unyielding. Density of the subgrade materials shall be 97 percent of AASHTO T-

180. Mud or other soft or spongy material shall be removed and the void filled with base course and rolled and tamped thoroughly in layers not exceeding 12 inches in thickness. The edges of trenches which are broken during subgrade preparation shall be removed and trimmed neatly before resurfacing.

Mixing, placing, spreading and compaction of a minimum 3-inch bituminous surface course (greater depths may be required as shown on the Drawings) shall conform to applicable parts of Utah Department of Transportation Standard Specifications, 2012, excluding pay factor allowances.

5.2.3.5.1 UDOT ROADWAY: When trenching occurs within a UDOT roadway, a 2" deep mill and fill is required: 20' on each side of the trench when crossing the traveled way, and from lane stripe to lane stripe on any lane, or portion of lane with trench construction within it. Pavement markings must be restored with new material similar to that which was removed.

5.2.3.6 CONCRETE CURBS, GUTTER, SIDEWALKS AND DRIVEWAYS: Existing improvements shall be removed and replaced to the next joint or scoring line beyond the actually damaged or broken sections; or in the event that joints or scoring lines do not exist or are three or more feet from the removed or damaged section, the damaged portions shall be removed by saw cutting full-depth.

All new concrete shall match, as nearly as possible, the appearance of adjacent concrete improvements. Where necessary, lampblack or other pigments shall be added to the new concrete to obtain the desired results.

Concrete forms shall be true to line and of sufficient strength to ensure against bulging or displacement.

Contraction and expansion joints shall match original construction in placement and size, unless otherwise required by local jurisdiction having authority.

Reinforcement shall be replaced as in original construction, and dowelled into edges of existing concrete, unless otherwise required by local jurisdiction having authority, and shall be installed in accordance with applicable CRSI and ACI Standards.

Finishing and curing shall be in accordance with local jurisdiction having authority.

5.2.3.7 PLANTED AREAS: Prior to placing topsoil and/or sod, examine and repair the subgrade as necessary to assure a smooth and even surface which will match grade and contours of surrounding undisturbed ground. Finish grade construction areas to match grade prior to construction activities. Assure that a positive slope away from all building walls is maintained for at least 10 feet to prevent runoff from approaching walls.

5.2.3.8 SPRINKLING SYSTEMS: Restore all sprinkling systems disturbed, removed, or damaged by construction operations in a condition at least equal to that prior to construction.

5.2.3.9 MISCELLANEOUS IMPROVEMENTS: All other improvements interrupted or removed to permit the construction specified herein shall be restored. Miscellaneous improvements to be restored shall include, but shall not be limited to, the following:

### Traffic Signs Mail Boxes

Drainage and Irrigation Ditches Culverts Canals and Canal Structures Bridges and Bridge Abutments Fences

5.2.3.10 PROTECTION: Protect all improvements that are not identified for removal or modification on the project Drawings, whether existing or restored, from damage, unless otherwise required by local jurisdiction having authority.

### End of Section

### SECTION 5.3 CULINARY WATERLINE AND APPURTENANCES

5.3.1 DESCRIPTION: The CONTRACTOR shall install all pipe, furnish and install: Valves, valve boxes, fire hydrants, service connections, meter boxes, check valves, air release valves, pipe bedding material; furnish and install all couplings, fittings, bolts, nuts, gaskets, jointing materials, and appurtenances as shown and specified, and as required for a complete and workable piping system.

All products incorporated into the project shall be new. All materials and products in contact with culinary water shall be certified compliant with NSF standard 60 or 61, as applicable.

5.3.2 MATERIALS:

5.3.2.1 PVC C-900 PIPE: (Refer to Sec. 5.5, "AWWA C-900 PVC Water Pipe").

5.3.2.2 DUCTILE IRON PIPE: (Refer to Sec. 5.6, "Ductile Iron Pipe ").

5.3.2.3 PVC C-900 PIPE: (Refer to Sec. 5.7, "AWWA C-906 Fused HDPE Piping for Potable Water").

5.3.2.4 FIRE HYDRANTS: Fire hydrants shall be of a "traffic model" type design conforming to AWWA C-502 Specifications. Hydrants shall be supplied with two 2-1/2- inch and one 4-1/2-inch nozzles. All nozzles shall have national standard threading. A one cubic yard gravel sump shall be provided at each hydrant for drainage. Fire hydrants shall be Mueller Super Centurion, Clow Medallion or District-approved equal.

5.3.2.5 ISOLATION VALVES: All main line isolation valves shall conform to Standard AWWA C509 for Resilient-Seated Gate Valves or C504 for Rubber-Seated Butterfly Valves, as applicable. All valves shall be designed for 150 psi working pressure or above. Buried main line valves shall be MJ x MJ. Buried hydrant lateral valves shall be FLG x MJ.

5.3.2.6 VALVE BOX AND COVER: All buried valves shall be installed complete with two-piece, cast iron, screw slip, 5-1/4-inch shaft valve box with adjustable height to bring the top of the valve box flush with the ground surface. The valve box and top section shall be from the same manufacturer, intended for use together and within the published dimension tolerances. The valve box shall not be less than 5 inches in diameter and shall have a minimum thickness of 3/16 inch. Valve boxes shall be "Tyler" or equal.

All valve boxes shall be provided with suitable base cover. The word "WATER" shall be cast on the cover. An extra deep cover shall have a minimum shaft length of 4", total minimum depth of 6" and a total minimum weight of 24 lbs. The extra deep valve box cover shall be P/N 06800045 by EJ, model M-8045 by D&L Foundry or approved equal.

5.3.2.7 FITTINGS: Fittings shall be ductile iron of the short body design and shall conform to AWWA Standards C-110 or C-153. Fittings inside structures or where otherwise noted on the drawings shall be ANSI Class 125 flanged design with full face rubber gaskets. All exterior surfaces of fittings shall be coated with a petroleum asphaltic coating unless otherwise noted on the Drawings. Tees for fire hydrant laterals shall be MJ x FLG.

	SITE BOUNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 (801) 729-1569	AND PROFESSIONAL SPECIAL	La	and Development - Public	ering & Construction, LLC c Works - Water & Wastewater Utilities Iden, UT 84412 (801) 458-9647	40.0 Acre
S	David E. Hawkes, PLS Utah No. 356548	CHRISTENSEN	DATE 🔍	REVIEWED	SUBMITTAL	DEVELOPER: Lync Con
-		A/27/24	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS:
	DATE SURVEY / SUBMITTAL	STATE OF UTAN	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bou
	1/03/2020 Site Boundary and Topographic Survey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cor
	3/4/2021 Weber County Surveyor's Record Plat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS 5.3.2.8 COUPLINGS: Couplings shall be equal to the product of Romac, JCM, Smith- Blair, or Dresser with cast iron couplings being used on all ductile iron pipe. Couplings shall be of the straight, transition, or reducing style as required by the specific installation. All steel fittings shall be coated with a non-oxide coating and bolts shall be coated with a fluoropolymer in accordance with these specifications.

5.3.2.9 SERVICE SADDLES: Stainless steel, dual strap, nylon-coated with IPS threads, Romac 202NS or

5.3.2.10 CORPORATION STOPS: Connections to main lines shall be made through all- metallic ground key corporation stops with MNPT inlet by CTS compression end connections.

5.3.2.11 PIPE FOR SERVICE CONNECTIONS: Pipe for water services shall be minimum 1" diameter 200 psi CTS poly pipe for potable water service, complying with AWWA Standard C901.

5.3.2.12 METER SETTER ASSEMBLY: A typical meter assembly (for a single family dwelling) shall consist of a copper setter, FORD VBHC 72-18W-44-44QNL, 18-inch riser with angle ball valve on the inlet side and Utah State approved dual check valve on the outlet side. Connection to service lines at the base of the setter shall be made with compression connections. The water meter shall be supplied by the District (the entity requesting the meter shall pay the District for the meter, in accordance with established practice).

5.3.2.13 METER BOXES AND LIDS: Meter boxes for standard residential meters shall be round, 18 inches inside diameter precast concrete boxes 30 inches deep. The lids for meter boxes shall be cast iron with a lifter worm lock, operated by a large pentagon head bolt, and shall be D&L L-2240-Universal with a recessed lid for an antenna and a 2" hole to accommodate meter reading, or approved equal. All meter boxes shall be installed and inspected in accordance with the approved drawings.

5.3.2.14 THRUST RESTRAINT: The material for thrust blocks shall be concrete which shall have a compressive strength of no less than 2,000 psi in 7 days. Rebar for valve and vertical elbow tie-downs shall be 60-ksi steel. Mechanical joint restraints shall be compatible with the pipe material on which they will be installed, and of standard manufacture by EBAA Iron, ROMAC or approved equal. Provide and install fluoropolymer-coated hardware on mechanical joint restraints.

5.3.2.15 UNDERGROUND WARNING TAPE AND LOCATION WIRE: The tape shall be a 2-inch metallic core with a polyethylene cover, blue in color, and have the words "Caution Water Line Buried Below" imprinted on it. The tape shall be Style No. 2WAT as manufactured by Seton Name Plate Company of New Haven, Connecticut, or approved equal. Copper location wire shall be at least #14 plastic coated solid wire.

5.3.2.16 CHECK VALVES: Check valves shall prevent reverse flow in the pipelines. The check valves shall have steel or ductile iron body with bronze trim, stainless steel spring, and resilient seat. The valves shall be Class 125 or better. The check valve shall be manufactured by Val-Matic or approved equal.

5.3.2.17 CONNECTION HARDWARE: Except where otherwise shown or specified, acceptable bolts and nuts

1) Below grade or subject to high humidity or non-potable submergence: Carbon steel: a) Conforming to the requirements of ASTM A307 Grade A or higher yield and tensile strengths. The corresponding nuts shall conform to ASTM A563 Grade A or higher yield and tensile strengths. b) All bolts and nuts shall be coated with fluoropolymer, TRIPAC 2000 coating system, or approved equal. Anti-seize compound shall not be utilized with the blue nuts.

2) Submerged service, potable: Stainless steel:

approved equal.

are:

5.3.3 CONSTRUCTION:

a) Conforming to the requirements of ASTM F593. The corresponding nuts shall conform to ASTM F594. b) Nuts shall be finished with fluoropolymer, TRIPAC 2000 coating system, or approved equal. Anti-seize compound shall not be utilized with the blue nuts.

3) Above-grade, non-humid, non-submerged: Carbon steel:

- a) Conforming to the requirements of ASTM A307 Grade A or higher yield and tensile strengths. The corresponding nuts shall conform to ASTM A563 Grade A or higher yield and tensile strengths.
- b) All bolts and nuts shall be zinc plated in accordance with ASTM F1941 (Fe/Zn 5A).
- c) Coatings shall not be applied to nuts or bolts except with the District's written approval.
- 4) Above-grade, weather-exposed, non-submerged: Carbon steel:
- a) Conforming to the requirements of ASTM A307 Grade A or higher yield and tensile strengths. The corresponding nuts shall conform to ASTM A563 Grade A or higher yield and tensile strengths.
- b) All bolts and nuts shall be hot-dip galvanized in accordance with ASTM A153.
- c) Coatings shall not be applied to nuts or bolts except with the District's written approval.

5.3.2.18 BLOW OFF: Permanent (intended for use after construction and commissioning of the water line) blow off valves shall be premanufactured, below-grade, self-draining and non-freezing in a concrete pipe section with ring and cover labeled "WATER". Blowoffs to flush a 10" or smaller-diameter mainline shall be Model #78 (2") and for flushing a 12" to 16" mainline shall be a Model #7600 (4") by Kupferle Foundry. Temporary (limited to the duration of construction, after which they will necessarily be immediately removed to connect another length of pipe) blowoffs may be of the contractor's manufacture and of the size needed to produce a flow of 3.0 FPS through the mainline it is intended to flush. Pipe and fittings shall be brass or other material approved by the District Manager. Galvanized steel shall not be incorporated into any blow-off assembly.

5.3.2.19 OTHERS: Other materials as specified on the drawings.

5.3.3.1 DELIVERY, STORAGE AND HANDLING: Load and unload pipe, fittings, specials, valves, and accessories by lifting with hoists or skidding to avoid shock or damage. Do not skid or roll pipe on skidways against pipe already on the ground.

Lifting of pipe during unloading and placing into the trench shall be done using two nylon slings placed at the quarter points of the pipe sections. The slings shall bear uniformly against the pipe. Under no circumstances shall the pipe or accessories be dropped into the trench. When not being handled, the pipe shall be supported on timber cradles or on properly prepared ground, graded to eliminate all rock being transported, the pipe shall be supported at all times in a manner which will not permit distortion or damage to the lining or coating. Any unit of pipe that, in the opinion of the ENGINEER, is damaged beyond repair by the CONTRACTOR shall be removed from the site of the work and replaced with another unit. No payment will be made for damaged pipe or for repairs to such damaged pipe. The use of chains or cables for handling the pipe is not permitted.

Each length of pipe shall be unloaded opposite or near the place where it is to be laid in the trench.

5.3.3.2 CONNECTIONS TO EXISTING MAINS: Connections to existing mains shall be made where indicated on the Drawings. The CONTRACTOR shall determine the exact pipe size and material and provide applicable valves, fittings, and couplings to make a smooth and straight transition into the existing pipe line(s). All connections shall be made and visually inspected by the District for leakage with the line under pressure prior to backfilling. Connections will normally be made with a tee, cross, or other similar type connector.

The CONTRACTOR must uncover the connection area and determine the needs for the connection prior to turning off the water. The water may be turned off Monday through Friday between the hours of 9:00 am and 4:00 pm only, with planned shutdowns starting only on Monday through Thursday. The OWNER must be given 24 hours notice prior to turning off the water to any portion of the system. The CONTRACTOR must make reasonable efforts to avoid disruption of water service.

5.3.3.3 WATER MAINS: Water mains shall be installed in accordance with the AWWA standard for the type of pipe and as may be further referenced in Section 5.3.2. The open ends of all pipelines under construction shall be covered and effectively sealed at the end of the day's work. All mainlines shall terminate with either a fire hydrant or appropriately-sized permanent blowoff.

5.3.3.4 FIRE HYDRANTS: All fire hydrants shall be installed with a 1 cubic yard gravel sump and concrete thrust block. See Construction Drawings for thrust blocking. Concrete shall not be placed around joints, bolts, or drain holes. Ensure that drain holes are free to drain to sump. Cover all metal contact areas with a poly wrap material prior to concrete placement. All hydrants shall be installed with the upper safety flange at least 2 inches and not more than 6 inches above ground level. All hydrants shall be installed with the steamer nozzle facing the street unless otherwise approved by the OWNER.

The location of fire hydrants shall be consistent with the requirements of the State- adopted fire code and as determined by the local fire code official.

Hydrant drains shall not be connected to, or located within, 10 feet of sanitary sewers. Where possible, hydrant drains shall not be located within 10 feet of storm drains.

5.3.3.5 ISOLATION VALVES: The CONTRACTOR shall furnish and install isolation valves at the locations shown on the drawings. The valves shall include either valve and

valve box with lid, or valve with hand wheel as indicated on the drawings. The valves shall have flanged or mechanical joint ends, non-rising stem, O-ring, seals, operating nut and extension as required, or hand wheel, and iron body-bronze resilient seat. The valves shall meet or exceed AWWA Standard C-504 or C-509.

Valves will be inspected, cleaned, set in line, and jointed to pipe with mechanical or flanged joints as indicated on the Drawings. All mainline valves shall have a concrete base poured in place onto which the valve is anchored against movement by straps on both sides of the valve housing. Steel anchor rods shall be rust-proofed or painted.

An isolation valve shall be placed on all 3 faces of new tees and all 4 faces of new crosses. An exception may be granted by the District when new valves on the same section of main line would be within 200' of each other, in which case only one new valve would be required. Valves shall be located at not more than 500-foot intervals in commercial districts and at not more than one block or 800-foot intervals in other districts. Where customers are widely scattered and where future development is not expected, the valve spacing shall not exceed one mile.

5.3.3.6 VALVE BOX AND COVER: All buried valves shall be installed complete with two-piece, cast iron, 5-1/4-inch shaft valve box with locking lid. The lid shall have the word "WATER" cast in the metal.

Valves and valve boxes shall be installed where shown on the Drawings. Valves and valve boxes shall be set plumb. Valve boxes shall be centered directly over the valve. Valves shall be aligned with property lines where possible. Earth fill shall be carefully tamped around the valve box to a distance of 4 feet on all sides of the box, or to the undisturbed trench face if less than 4 feet. Valve boxes shall have the interiors cleaned of all foreign matter before installation.

All valve boxes located in streets shall be installed as nearly to grade as possible. After the pavement is in place, the valve boxes shall be raised to grade, the surrounding asphalt shall be neatly cut to form a circular opening 2 feet and 6 inches in diameter with the valve box centered, and a 12 inch thick concrete collar shall be cast around the box. Valve boxes and collars in off-road areas shall also be similarly collared.

When the valve box is in a roadway with posted speeds equal to or over 40 MPH, an extra deep valve box cover shall be installed.

5.3.3.7 FITTINGS: Bends, tees, reducers, flange adapters, and adaptor couplings shall be inspected, cleaned, and jointed to pipe as specified by the manufacturer. Reaction or thrust blocking shall be applied at bends of 11-1/4 degrees and more, at plugs, caps, and at tees.

5.3.3.8 COUPLINGS: Couplings shall be installed where connecting two segments of pipe of the same nominal diameter in the same alignment, when repairing or making final connections. Mechanical restraint shall be provided at the coupling if the two pipes are different nominal diameters.

5.3.3.9 WATER SERVICE CONNECTIONS: Make service connections through a service saddle and install service lines as shown on the Drawings, or as directed by the OWNER's representative. Use teflon tape on all taps. Locate service taps in the upper quadrant of the main line, approximately 45 degrees from horizontal. The minimum

distance between taps is 24 inches, with a 5 degree stagger. Do not make service taps within 24 inches of the end of the main line.

Excavate and backfill in accordance with Section 5.1, "Pipeline Trench Excavation and Backfill". All work must be inspected by the District prior to backfilling. Pressure test all services before backfilling. Make no service connections until main line is fully accepted by the OWNER. Extend service line to meter and 5 feet beyond meter and plug as indicated on the Drawings.

Service laterals shall be installed in a straight line from the main to the meter and square to the main whenever possible. No couplings are allowed in service laterals unless approved in writing by the District Manager. If the service lateral must be extended, a new lateral shall entirely replace the existing lateral from main to meter, regardless of which end is extended.

Install a tracer wire with all service laterals. Ensure physical and electrical connectivity with the wire at the mainline. The wire shall be terminated with a neatly wound coil, 4 feet long in the meter box. All meter setter assemblies shall be no more than 20 inches and not less than 18 inches from finish ground level. The water meter shall be installed by the District.

Record station of service connection to main line and record location and depth of end of service line, tying distances to at least two surface landmarks. Sketch information on an 8-1/2 x 11 inch form and record any particular problems and submit to District Inspector before demobilizing from site.

5.3.3.10THRUST RESTRAINT: Thrust blocks shall be provided at reducers and valves where shown on the drawings, at all tees, plugs, and caps, and at bends deflecting 11- 1/4 degrees or more. Reinforcement bar shall be pre-bent before placement around valve or elbow, then temporarily spread apart for installation. Form hooks in both ends of rebar to extend completely under the valve or fitting.

Thrust blocks shall be placed between solid ground and the fitting to be anchored; the area of bearing on the pipe and on the ground in each instance shall be that shown on the drawings. The block shall, unless otherwise shown or directed, be so located as to contain the resultant thrust force and so that the pipe and fitting joints will be accessible for repair.

Mechanical thrust restraints shall also be used at all locations where thrust blocks are called for. Mechanical thrust restraints shall be securely wrapped with 8 mil or greater polywrap and taped to prevent contact with thrust block concrete.

5.3.3.11 UNDERGROUND WARNING TAPE AND TRACE WIRE: The CONTRACTOR shall furnish and install an underground warning tape as the trench is backfilled. The tape shall be placed directly over the waterline and to a depth of 24 inches below the finished ground surface.

A plastic-coated copper trace (alternatively, "location") wire shall be in the bottom of the main line or service lateral pipe trench (when a new service lateral is pulled through an existing lateral, a tracer wire shall also be pulled with the new lateral) and accessible from the surface at each valve box (bring the wire up the outside of the bottom of each box and bring it inside the top section) and at each fire hydrant and blowoff. At fire

hydrants, the trace wire shall be brought above grade and coiled at least 2 times around the hydrant barrel below. At blowoffs, 4 feet of the trace wire shall be neatly coiled in the bottom of the box.

All mainline trace wires must be interconnected in intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single 3-way lockable connector. At crosses, the four wires shall be joined using a 4-way connector. Use of two 3-way connectors with a short jumper wire between them is an acceptable alternative.

Direct bury wire connectors – shall include 2- and 3-way lockable connectors and mainline to lateral lug connectors specifically manufactured for use in underground trace wire installation. Connectors shall be dielectric silicon filled to seal out moisture and corrosion, and shall be installed in a manner to prevent any uninsulated wire exposure. Non-locking friction fit, twist on or taped connectors are prohibited.

5.3.3.12 SEPARATION OF WATER MAINS FROM SANITARY SEWER: The horizontal distance between pressure water mains and sanitary sewer lines shall be at least ten feet. Where a water main and a sewer line must cross, the water main shall be at least 18 inches above the sewer line. Separation distances shall be measured edge- to-edge (i.e. from the nearest edges of the facilities). Water mains and sewer lines shall not be installed in the same trench. Where local conditions make it impossible to install water or sewer lines at the separation distances required above, an exception to the standard may be possible. The entity seeking the exception shall initiate and pursue a request for a separation exception with the State Division of Drinking Water, in accordance with R309-550-7 of the State of Utah Administrative Rules.

5.3.3.13 BLOW OFF: A permanent blow off meeting District standards shall be installed at all dead end main lines that otherwise do not terminate at a fire hydrant. Blow offs shall not be connected directly to a sanitary sewer.

5.3.4 MEASUREMENT AND PAYMENT: As specified in Section 1.4 of the Contract Documents.

End of Section

SECTION 5.4

DISINFECTION AND TESTING OF WATER LINES

5.4.1 DESCRIPTION: Except as otherwise provided herein, the CONTRACTOR shall furnish all equipment, labor, and materials required for testing and disinfecting hydraulic structures and pipelines as specified. Water for testing and disinfecting will be furnished by the OWNER; however, the CONTRACTOR shall be responsible for coordinating with the OWNER the acquisition and use of the water for testing and disinfection procedures.

Disinfection shall be accomplished by chlorination in accordance with AWWA standard C-651. Each completed section shall be disinfected and tested prior to introduction into the drinking water system. Release of water from structures and pipelines, after completion of testing and disinfection, shall be in conformance with AWWA standard C- 651.

5.4.2 PROCEDURES:

5.4.2.1 PRELIMINARY CLEANING AND FLUSHING: Prior to both testing and disinfecting, all pipelines shall be thoroughly washed, flushed or blown out, under the direction of the OWNER. Flushing shall be accomplished through hydrants, valves,

blow-offs, or other means provided by the CONTRACTOR and approved by the OWNER sufficient to provide for a 3.0 foot per second (FPS) flushing velocity in the pipeline. Where the OWNER determines that a 3.0 FPS flushing velocity is not practical, the greatest feasible flow for

2-3 volumes shall be achieved.

5.4.2.2 HYDROSTATIC TESTS: Prior to testing, all piping shall be flushed or blown out as appropriate. The CONTRACTOR shall test all piping either in sections or as a unit. Mortar-lined piping shall not be tested before the mortar lining has attained an age of

14 days. The test shall be made by placing temporary bulkheads in the pipe and filling the line slowly with water. Care shall be taken to see that air vents are installed at appropriate locations to evacuate air, and that all air vents are open during filling. After the piping or section thereof has been filled, it shall be allowed to stand under a slight pressure for a sufficient length of time to allow the mortar lining to absorb what water it will and to allow the escape of air from any air pockets. During this period, bulkheads, valves, and connections shall be examined for leaks. If any are found, corrective measures satisfactory to the OWNER shall be taken. The test shall consist of holding a minimum pressure of 200 psi on the section being tested for a minimum period of

2 hours. The test pressure shall be maintained within 5 PSI without the addition of makeup water for the duration of the test.

In the case of pipelines that fail to pass the prescribed leakage test, the CONTRACTOR shall determine the cause of the excessive leakage, shall take corrective measures necessary to repair the leaks, and shall again test the pipelines, all at no additional cost to the OWNER.

5.4.2.3 DISINFECTING PIPELINES:

•CHLORINATION: A chlorine-water mixture shall be applied by means of a solution-feed chlorinating device. The chlorine solution shall be applied at one end of the piping or pipeline through a tap in such manner that as the pipeline is filled with water, the dosage applied to the water entering the pipe shall be approximately 50 ppm. Care shall be taken to prevent the strong chlorine solution in the line being

treated from flowing back into the line supplying the water. Chlorine concentration shall be tested and verified by the OWNER.

•RETENTION PERIOD: Chlorinated water shall be retained in the pipeline long enough to destroy all non-spore-forming bacteria. This period shall be at least 24 hours. After the chlorine-treated water has been retained for the required time, the chlorine residual at the pipe extremities and at other representative points shall be at least 25 ppm.

•CHLORINATING VALVES: During the process of chlorinating the piping and pipelines, all valves and other appurtenances where possible shall be operated while the pipeline is filled with the heavily-chlorinated water.

5.4.2.4 FLUSHING: After both pressure testing and chlorination, all pipelines shall be flushed. Flushing shall be accomplished through fire hydrants, end of line blow offs with a minimum of 2-inch diameter or, the CONTRACTOR shall install a tap sufficient in size to provide for a 3-foot per second flushing velocity in the pipeline. Refer to the reproduction of Table 3 of AWWA Standard C651-14, below.

# Stagecoach Estates - 56 Lot Residential Development

# TAYLOR WEST WEBER WATER DISTRICT CONSTRUCTION SPECIFICATIONS

struction 1800 South 3800 West, West Weber, Utah undary Consultants / David E. Hawkes, PLS struction Approval: Weber County Engineering



lap	oduce 3.0 ft/sec prox.) Velocity in	Size of	Tap Use	d in. (mm)	Numbe	r of Li	lydrant	backfill, location tape; to identified as a separate thrust blocks; pressure related to placing the lin
	Main	1(25)	1-1/2 (38	) 2 (51)		utlets	lyurant	miscellaneous improve
gpm	(L/sec)	Number o on	f Taps Re Pipe**	quired	2-1/2 in. (64 mm)		I/2 in. 4 mm)	End of Section
120 260	(7.4) (16.7)	1 -	- - 1	-	1 1		1 1	SECTION 5.6 - DUCTI
470 730 1.060	(29.7) (46.3) (66.7)		2 3 -	- 2 3	1 1 2		1 1 1	5.6.1DESCRIPTION: T and inspection.
1,880	(118.6)	-	-	5	2		1	5.6.2MATERIALS:
ill dischar	ge approximately	1,000 gpm						5.6.2.1DUCTILE IRON A-21.51 "Ductile Iron P Minimum pressure clas
	based on 3.0 ft/s	ec discharge	e through	5 ft (1.5m)	of galvanized	d iron	(GI) pipe with	5.6.2.2JOINTS:
RIOLOGIC/ ng, the faile rst sample ested no le sts come b e third sam	ure of any one su will be pulled an ss than 24 hours back negative, th nple returns a ne	uch test will i d tested imm after the firs e tie-to-exist gative result	esult in st ediately a st sample ing may ta , the secti	arting the after final fl is pulled fr ake place,	flushing and t ushing; 2) Th om the same and a third ar	test s le sec secti nd fin	equence over cond sample will ion of pipe; 3) If al sample pulled	•MECHANICAL JOINT 21.6 and ANSI 21.11. A gaskets shall be less th all characteristics, toler fitting as per drawings. •PUSH-ON JOINTS: P
EMENT AN	ID PAYMENT: P	ayment for c	leaning, p		ı, hydrostatic	testir	ng, disinfecting,	joints shall meet the re Lubricants shall be nor odor or flavor to water
								•FLANGED JOINTS: F Flanges may be cast in
VC Water	Pipe							drilled and of proper di of ANSI A 21.10, "Ame
oints.	work includes pr	oviding and	installing	PVC AWW	/A C-900 wat	er pip	be with integral	Bolts and nuts, unless 5.3.2.16. Bolts will be p the diameter required f less than 1/8 inch extends past fa or equal and be certifie
	• •						•	size, ring type or full fa
M D3139,								<ul> <li>COMPRESSION JOII gaskets, Rockwell 441 drawings.</li> </ul>
	shall be cast iro	n or ductile i	on, iron p	ipe size fo	r PVC applica	ation,	and in	5.6.2.3FITTINGS:
ithout burs	ting, hydrostatic	tests of three	e times th	e rated wa	ter working p	ressu		•MECHANICAL JOINT Standard for Ductile Ire
E CONNE	CTIONS: Service ess-steel strap se	e connection	s to PVC	plastic pre	ssure pipe sh	all be		•PUSH-ON FITTINGS: ANSI A 21.11.
		dard and rai	dom long	th of ning	is to be teste	d to tl	broo timos tho	•FLANGED FITTINGS All flanges shall be fac
of the pipe es shall be	for a minimum of tested in accord	f 5 seconds. ance with AS	The integ	gral bell is t 99 to withs	o be tested v tand, without	vith th failur	ne pipe. Randomly e, pressures listed	support cap screws or 5.6.2.4CEMENT MOR
of 985 psi.							, a mininani	accordance with the re and Ductile Iron Pipe a
_ATION: U hall be sta	ble, smooth and	free of froze	n materia	l, clodded	dirt, and stone	es ov	er 3/4 inch in	5.6.2.5ASPHALTIC CC approximately 1 mil thi pipe and fittings install otherwise prepared for
ed to provid oper bedd ide adequa	de 6 inches clear ing providing uni ate haunching. Ir	ance in all d form support hitial backfill	irections f under the material s	rom pipe a e pipe. Bac hould be p	nd accessori kfill materials laced to a mi	es. T s shal nimui	he pipe shall be Il be worked under m of 12 inches	5.6.2.6INTERIOR PIPI and at least 2 coats of Owner.
lumps, an y closed to	d debris. At all ti	mes when w	ork is in p	rogress, a	l open ends o	of the	pipe and fittings	5.6.2.7COATING OF F coating on the exterior requirements of NSF S
								5.6.2.4 above.
lid foundat ograde sha	ion to support the all be excavated t	e pipe and s	uperimpo	sed load, a	nd where gro	oundv	al does not afford vater must be vith crushed rock	5.6.3CONSTRUCTION 5.6.3.1INSTALLATION
		ection 1.4.9 t	akes prec	edence ov	er the followi	ng if t	there is a	and Their Appurtenand Tees, elbows, crosses specified on the drawir
	two sections.			l ha nar lin	eal foot of ins	tallec		Anchors, thrust bolts, t
EMENT AN tween the t 900 WATE lass show	two sections. ER PIPE: PVC pi n on the Drawing	is and in the	bid sched	dule (paym	ent shall be n	nade		as shown on the appro
EMENT AN tween the t 900 WATE lass shown pipe is not ed in the fi	two sections. ER PIPE: PVC pi n on the Drawing	is and in the uded as a bio struction. No	bid scheo d item). M o deduct in	dule (paym easuremen n length for	ent shall be n nt shall be alc r payment wil	nade ong th I be n	ne centerline of the nade for valve &	
	260 470 730 1,060 1,880 276 kPa) p vill discharg proximate os on pipe ow RIOLOGIC/ ng, the fail rst sample ested no le sts come k e third sam urface imp EMENT AN g shall be PVC Water TION: The joints. LS: pe shall co per ASTM The Elast M D3139, e. S: Fittings n AWWA C ithout burs ed with me E CONNE ble stainle pe of mainl Y ASSURA of the pipe es shall be of 985 psi. JCTION: U hall be stai oles shoul ed to provision of 985 psi. JCTION: U hall be stai oles shoul ed to provision of shall be stai oles shoul ed to provision of shall be stai of the pipe es shall be of gas psi. JCTION: U hall be stai oles shoul ed to provision of shall be stai of shall be shall be of shall be shall be shall be of shall be shall be shall be shall be shall be sh	260 (16.7) 470 (29.7) 730 (46.3) 1,060 (66.7) 1,880 (118.6) 276 kPa) pressure in the m vill discharge approximately pproximately 2,500 gpm (14 os on pipe based on 3.0 ft/s ow RIOLOGICAL TESTING: The ng, the failure of any one su rst sample will be pulled any ested no less than 24 hours sts come back negative, th e third sample returns a ne urface improvements that r EMENT AND PAYMENT: P ig shall be included in the lin PVC Water Pipe TION: The work includes pr joints. LS: pe shall comply with the lat per ASTM D1784. Pipe sha The Elastomeric Seal (gas M D3139, and the installatified ithout bursting, hydrostatic ed with mechanical- or flang E CONNECTIONS: Service be of mainline pipe. Y ASSURANCE: Each stan of the pipe for a minimum of es shall be tested in accord blied in 60 to 70 seconds: D of 985 psi. JCTION: LATION: Under no circumst hall be stable, smooth and oles should be provided at ed to provide 6 inches clear oper bedding providing uni- ide adequate haunching. Ir upps, and debris. At all tin y closed to the satisfaction or fittings.	260       (16.7)       -         470       (29.7)       -         730       (46.3)       -         1,060       (66.7)       -         1,880       (118.6)       -         276 kPa) pressure in the main with the livill discharge approximately 1,000 gpm (160 L/sec).       -         276 kPa) pressure in the main with the livill discharge approximately 2,500 gpm (160 L/sec).       -         280 on pipe based on 3.0 ft/sec discharge ow       -         ROLOGICAL TESTING: The OWNER sing, the failure of any one such test will rest sample will be pulled and tested immisted no less than 24 hours after the first scome back negative, the tie-to-exist e third sample returns a negative result urface improvements that may be need         EMENT AND PAYMENT: Payment for cig shall be included in the lineal foot price         PVC Water Pipe         TION: The work includes providing and joints.         LS:         pe shall comply with the latest version of per ASTM D1784. Pipe shall be DR18 to The Elastomeric Seal (gasket) shall co TM D3139, and the installation of the C9 e.         S: Fittings shall be cast iron or ductlie in AWWA C-110 (flanged fittings) or AW         ithout bursting, hydrostatic tests of three of the pipe for a minimum of 5 seconds.         pe of mainline pipe.         Y ASSURANCE: Each standard and rar of the pipe for a minimum of 5 seconds.         as shall be tested in accordance with AS	260       (16.7)       -       1         470       (29.7)       -       2         730       (46.3)       -       3         1,060       (66.7)       -       -         1,880       (118.6)       -       -         276 kPa) pressure in the main with the hydrant flurill discharge approximately 1,000 gpm (63.1 L/sec proximately 2,500 gpm (160 L/sec).       proximately 2,500 gpm (160 L/sec).         pos on pipe based on 3.0 ft/sec discharge through ow       association of the section accordance with ASTM D153 secon section of the secon se	260       (16.7)       -       1       -         470       (29.7)       -       2       -         730       (46.3)       -       3       2         1,060       (66.7)       -       -       3       1         1,880       (118.6)       -       -       5         276 KPa) pressure in the main with the hydrant flowing to at vill discharge approximately 1,000 gpm (66.1 L/sec).       as on pipe based on 3.0 ft/sec discharge through 5 ft (1.5m) ow         ROLOGICAL TESTING: The OWNER shall obtain three saring, the failure of any one such test will result in starting the state on less than 24 hours after the first sample is pulled frists come back negative, the tie-to-existing may take place, e third sample returns a negative result, the section of pipel urface improvements that may be needed).         EMENT AND PAYMENT: Payment for cleaning, pre-flushing g shall be included in the lineal foot price of installed pipe.         PVC Water Pipe         TION: The work includes providing and installing PVC AWW foints.         LS:         pe shall comply with the latest version of AWWA Standard O per ASTM D1784. Pipe shall be DR18 unless shown otherw         The Elastomeric Seal (gasket) shall conform to ASTM F47         M D3139, and the installation of the C900 pipe shall conform in AWWA C-110 (flanged fittings) or AWWA C-153 (MJ fitting thout bursting, hydrostatic tests of three times the rated wa ed with mechanical- or flange-joint gaskets conforming to A' <td>260       (16.7)       -       1       -       1         470       (29.7)       -       2       -       1         730       (46.3)       -       3       2       1         1,860       (118.6)       -       -       3       2         1,880       (118.6)       -       -       5       2         276 kPa) pressure in the main with the hydrant flowing to atmosphere, a       ill discharge approximately 1,000 gpm (63.1 L/sec); and a 4-1/2 in. (114         pproximately 2,500 gpm (160 L/sec).       as on pipe based on 3.0 ft/sec discharge through 5 ft (1.5m) of galvanize.         ow       RIOLOGICAL TESTING: The OWNER shall obtain three samples of wate sits come back negative, the tie-to-existing may take place, and a third a test sto and back negative, the tie-to-existing may take place, and a third a test ind sample returns a negative result, the section of pipeline will be ac urface improvements that may be needed).         EMENT AND PAYMENT: Payment for cleaning, pre-flushing, hydrostatic g shall be included in the lineal foot price of installed pipe.         PVC Water Pipe       TION: The work includes providing and installing PVC AWWA C-900 with m per ASTM D1784. Pipe shall be DR18 unless shown otherwise on the DI The Elastomeric Seal (gasket) shall conform to ASTM F477. The gasket M D3139, and the installation of the C900 pipe shall conform to Uni-Bell e.         S: Fittings shall be cast iron or ductile iron, iron pipe size for PVC applicin AWWA C-110 (flanged fittings) or</td> <td>260       (16.7)       -       1       -       1         470       (29.7)       -       2       1       1         730       (46.3)       -       3       2       1       1         730       (46.3)       -       3       2       1       1         1.880       (118.6)       -       -       5       2         2276 KPa) pressure in the main with the hydrant flowing to atmosphere, a 2-1/2 in. (114 mm) pproximately 2,500 gpm (160 L/sec).       bs       at 4-1/2 in. (114 mm)         pproximately 2,500 gpm (160 L/sec).       bs       on pipe based on 3.0 ft/sec discharge through 5 ft (1.5m) of galvanized iron ow         RIOLOGICAL TESTING: The OWNER shall obtain three samples of water fror fng, the failure of any one such test will result in starting the flushing and tests at sample will be pulled and tested immediately after final flushing; 2) The sec stated no less than 24 hours after the first sample is pulled from the same sect sta scape will be pulled and tested immediately after final flushing; hydrostatic testing g shall be included in the lineal foot price of installed pipe.         PMC Water Pipe       -</td> <td>280       (16.7)       -       1       -       1       1         730       (46.3)       -       3       2       1       1         730       (46.3)       -       3       2       1       1         1,080       (66.7)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (16.7)       -       -       5       2       1         1,800       (16.7)       -       -       5       2       1         1,800       pipe based on 3.0 ft/sec discharge through 5 ft (1.5m) of galvanized iron (6.1) is ample pilet in the galvanized iron (6.1) is ample pilet in the installing rescond and in the installing rescond and in the installing rescond and i</td>	260       (16.7)       -       1       -       1         470       (29.7)       -       2       -       1         730       (46.3)       -       3       2       1         1,860       (118.6)       -       -       3       2         1,880       (118.6)       -       -       5       2         276 kPa) pressure in the main with the hydrant flowing to atmosphere, a       ill discharge approximately 1,000 gpm (63.1 L/sec); and a 4-1/2 in. (114         pproximately 2,500 gpm (160 L/sec).       as on pipe based on 3.0 ft/sec discharge through 5 ft (1.5m) of galvanize.         ow       RIOLOGICAL TESTING: The OWNER shall obtain three samples of wate sits come back negative, the tie-to-existing may take place, and a third a test sto and back negative, the tie-to-existing may take place, and a third a test ind sample returns a negative result, the section of pipeline will be ac urface improvements that may be needed).         EMENT AND PAYMENT: Payment for cleaning, pre-flushing, hydrostatic g shall be included in the lineal foot price of installed pipe.         PVC Water Pipe       TION: The work includes providing and installing PVC AWWA C-900 with m per ASTM D1784. Pipe shall be DR18 unless shown otherwise on the DI The Elastomeric Seal (gasket) shall conform to ASTM F477. The gasket M D3139, and the installation of the C900 pipe shall conform to Uni-Bell e.         S: Fittings shall be cast iron or ductile iron, iron pipe size for PVC applicin AWWA C-110 (flanged fittings) or	260       (16.7)       -       1       -       1         470       (29.7)       -       2       1       1         730       (46.3)       -       3       2       1       1         730       (46.3)       -       3       2       1       1         1.880       (118.6)       -       -       5       2         2276 KPa) pressure in the main with the hydrant flowing to atmosphere, a 2-1/2 in. (114 mm) pproximately 2,500 gpm (160 L/sec).       bs       at 4-1/2 in. (114 mm)         pproximately 2,500 gpm (160 L/sec).       bs       on pipe based on 3.0 ft/sec discharge through 5 ft (1.5m) of galvanized iron ow         RIOLOGICAL TESTING: The OWNER shall obtain three samples of water fror fng, the failure of any one such test will result in starting the flushing and tests at sample will be pulled and tested immediately after final flushing; 2) The sec stated no less than 24 hours after the first sample is pulled from the same sect sta scape will be pulled and tested immediately after final flushing; hydrostatic testing g shall be included in the lineal foot price of installed pipe.         PMC Water Pipe       -	280       (16.7)       -       1       -       1       1         730       (46.3)       -       3       2       1       1         730       (46.3)       -       3       2       1       1         1,080       (66.7)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (118.6)       -       -       5       2       1         1,800       (16.7)       -       -       5       2       1         1,800       (16.7)       -       -       5       2       1         1,800       pipe based on 3.0 ft/sec discharge through 5 ft (1.5m) of galvanized iron (6.1) is ample pilet in the galvanized iron (6.1) is ample pilet in the installing rescond and in the installing rescond and in the installing rescond and i

WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS

sultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 David E. Hawkes, PLS Utah No.

nstall pipelines shall be at the unit price in the Bid Schedule. Payment shall be full compensation on, cutting asphalt pavement; unclassified excavation; imported material for pipe bedding; trench tion tape; tracer wire, storing and installing the pipe, fittings, elbows and couplings not specifically separate bid item; removal and disposal of excess or rejected excavated materials; compaction; pressure testing; disinfecting, dechlorination, flushing and other materials, equipment and labor cing the line into service. Payment shall also include compensation for restoration of s improvements damaged during construction.

# - DUCTILE IRON PIPE

IPTION: This section covers the requirements for ductile iron pressure pipe materials, installation

FILE IRON PIPE: Ductile iron pipe shall conform to all requirements of AWWA C-151 and ANSI tile Iron Pipe, Centrifugally Cast in Metal Molds or Sand Lined Molds, For Water or Other Liquids." ssure class shall be 250 PSI.

# AL JOINTS: All mechanical joints shall meet requirements of ANSI A-

SI 21.11. All gaskets surfaces shall be smooth and free from imperfections. All mechanical joint be less than one year old. Bolts shall meet all requirements of the above specifications, honoring stics, tolerances, and tests. All bolts shall be of the proper size and length to match the size of pipe

IOINTS: Push-on joints shall be used for main line ductile iron pipe for this project. All push-on eet the requirements of ANSI 21.11. Gaskets shall be free from defects and not over one year old. all be non-toxic and have no deteriorating effects on gasket materials. It shall not impart taste, to water in a pipe.

OINTS: Flanged joints shall be bolted firmly with machine, stud or cap bolts of proper size. be cast integrally with the pipe or may be screwed or threaded pipe. Flanges shall be faced and proper dimensions and class, for size and pressure required. All flanges shall meet requirements .10, "American National Standard for Ductile Iron and Gray Iron Fittings."

### s, unless otherwise specified, shall be meet the requirements of

ts will be provided with standard hexagonal nuts and standard hexagonal heads. Bolts shall be of required for each flange and, when installed, shall be of length so that no more than 3/8 inch or

nds past face of nut. Gaskets shall be 1/16 inch thick, made of best quality sheet gasket material be certified to meet the requirements of NSF Standard 61. A gasket for each flange joint of proper or full face shall be installed.

SION JOINTS: Compression joints shall be mechanical joint cast iron sleeve with armor guard kwell 441 or Flange adaptor Rockwell Type 900 or approved equal, as specified on approved

AL JOINT FITTINGS: Mechanical Joint Fittings shall conform to ANSI A 21.10," American National Ductile Iron and Gray Iron Fittings."

FITTINGS: Push-on fittings shall conform to ANSI A 21.10 with bells, sockets, and plain ends per

ITTINGS: Flanged fittings shall conform to ANSI 21.10.

all be faced and drilled. Where cap screws or stud bolts are needed, flanges shall be tapped to rews or stud bolts as per approved drawings

INT MORTAR LINING: Ductile iron pipe and fittings shall be lined with cement mortar in vith the requirements of the "American National Standard for Cement Mortar Lining for Cast Iron ron Pipe and Fittings for Water" (ANSI A21.4 AWWA C104).

ALTIC COATING: Ductile iron pipe shall be supplied with an exterior asphaltic coating / 1 mil thick per applicable AWWA standards for ductile iron pipe and fittings, EXCEPT THAT all igs installed above grade or in pipe galleries shall be supplied without an asphaltic coating or epared for a primer and 2 coats of durable epoxy coating.

RIOR PIPING COATING: All interior piping shall be prepared for and coated with a suitable primer coats of liquid epoxy to a DFT of at least 10 mil. TNEMEC N140 or equal. Color as determined by

FING OF PIPES INSIDE STORAGE TANKS: Pipe inside storage tanks shall NOT have a coal tar e exterior but shall be externally coated with a two-part epoxy at least 12 mil DFT, meeting the s of NSF Standard 61. TNEMEC N140 or equal. Interior lining shall be the same as specified in

LLATION: Ductile iron pipe shall be installed in accordance with "Installation of Ductile Iron Mains" purtenances" (ANSI/AWWA C600).

crosses, and reducers shall be used for changes in direction and outlets, unless otherwise

ist bolts, thrust blocks and mechanical joint restraints shall be placed at valves, elbows, tees, etc., the approved drawings or as directed by the ENGINEER.

cumstances shall the pipe or accessories be dropped into the trench. All ductile iron pipe nall proceed on a stable foundation, with joints closely and accurately fitted. Joints shall be clean a non-toxic joint lubricant, as recommended by the pipe supplier, shall be applied uniformly to the and gasket surfaces to facilitate easy, positive joint closure.

be installed with uniform bearing under the full length of the barrel, with suitable excavations being ive pipe bells and fittings.

Bedding material shall be compacted around the pipe to firmly bed the pipe in position. If adjustment of position of a pipe length is required after being laid, it shall be removed and rejoined as for new pipe installation. In addition to the above requirements, all pipe installation shall comply with the specific requirements of the pipe manufacturer.

Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with adjoining pipe and to prevent sudden offsets to the flow line. All joint offsets shall be made as specified in AWWA Standard for "Installation of Water Mains", C600. As work progresses, the interior of the pipe shall be cleared of dirt and superfluous materials. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after jointing as set, and pipe shall not be laid when conditions of the trench or weather is unsuitable for such work. At all times when work is in progress, all open ends of the pipe and fittings shall be securely closed to the satisfaction of the ENGINEER, so that no water, earth, or other substance will enter the pipe or fittings.

5.6.3.2UNDERGROUND WARNING TAPE AND LOCATION WIRE: See 5.3.3.11.

5.6.3.3PIPE FOUNDATION AND BEDDING MATERIAL INSTALLATION: See 5.1.3.6.

5.6.3.4CLEANING AND FLUSHING: Refer to Section 5.4, "Disinfection and Testing of Water lines".

5.6.4MEASUREMENT AND PAYMENT: Section 1.4.9 takes precedence over the following if there is a discrepancy between the two sections.

Ductile iron pipe measurement shall be per lineal foot installed piping of the type, size and class shown on the drawings and in the bidding schedule. Measurement shall be along the centerline of the pipe as measured in the field following construction. No deduct in length for payment will be made for valve fittings, manholes or structures.

Payment will be made per Bid Item only after the surface restoration, including gravel and asphalt restoration, has been completed and accepted.

Payment to install pipelines shall be at the unit price in the Bid Schedule. Payment shall be full compensation for mobilization, traffic control signs, devices and flag persons; cutting asphalt pavement; unclassified excavation; imported material for pipe bedding; trench backfill; location tape; storing and installing the pipe, fittings, elbows and couplings; removal and disposal of excess or rejected excavated materials; compaction; thrust blocks; pressure testing; and disinfecting, flushing and placing the line into service. Payment shall also include compensation for restoration of miscellaneous improvements damaged during construction.

No classification of excavated materials shall be made other than solid rock requiring blasting (refer to Section 5.2, "Pipeline Trench Excavation and Backfill"). Excavation shall include the removal and subsequent handling of all water, earth, shale, loose or cemented gravel, loose rock, and other materials of whatsoever nature excavated or otherwise removed in the performance of contract work.

### End of Section SECTION 5.7

AWWA C-906 FUSED HDPE PIPING FOR POTABLE WATER

5.7.1General Terms and Conditions

5.7.1.1Scope. This specification covers requirements for PE 4710 high-density polyethylene piping for potable water distribution and transmission mains. All work shall be performed in accordance with these specifications.

5.7.1.2Engineered and Approved Drawings. Potable water distribution and transmission main construction shall be performed in accordance with engineered construction Drawings for the work prepared under the direction of a Professional Engineer.

5.7.1.3Referenced Standards. Where all or part of a Federal, ASTM, ANSI, AWWA, etc., standard specification is incorporated by reference in these Specifications, the reference standard shall be the latest edition and revision.

5.7.1.4 Licenses and Permits. A licensed and bonded Contractor shall perform all potable water distribution and transmission main construction work. The Contractor shall secure all necessary permits before commencing construction.

5.7.1.5Inspections. All work shall be inspected by an Authorized Representative of the Owner who shall have the authority to halt construction if, in his opinion, these specifications or standard construction practices are not being followed. Whenever any portion of these specifications is violated, the Project Engineer or his Authorized Representative, shall, by written notice, order further construction to cease until all deficiencies are corrected. A copy of the order shall be filed with the Contractor's license application for future review. If the deficiencies are not corrected, performance shall be required of the Contractor's surety.

5.7.1.6Submittals. Pipe specifications, stamping description, manufacturer's recommended joining procedures and certification of fusing technicians by pipe manufacturer as having fused, or been trained to fuse, pipe of the size specified within the 6 months preceeding the commencement of work under this contract.

# 5.7.2Polyethylene Pipe and Fittings

5.7.2.1 Qualification of Manufacturers. The Manufacturer shall have manufacturing and quality assurance facilities capable of producing and assuring the quality of the pipe and fittings required by these Specifications. The Manufacturer's production facilities shall be open for inspection by the Owner or his Authorized Representative. The ENGINEER shall approve qualified Manufacturers.

5.7.2.2Materials. Black PE materials used for the manufacture of polyethylene pipe and fittings shall be PE 3408 or 4710 high density polyethylene meeting ASTM D 3350 cell classification 345464C or 445574C, respectively, and shall be listed in the name of the pipe and fitting Manufacturer in PPI (Plastics Pipe Institute) TR-4 with a standard grade HDB rating of 1600 psi at 73°F. Color material, when used, shall be the same except for meeting ASTM D 3350 cell classification 345464E.

The material shall be listed and approved for potable water in accordance with NSF Standard 61. When requested on the order, the Manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements.

5.7.2.3 Interchangeability of Pipe and Fittings. The same Qualified and Approved Manufacturer shall produce polyethylene pipe and fittings. Products such as fittings or flange adapters made by sub-contractors or distributors are prohibited.

5.7.2.4Polyethylene Pipe. Polyethylene pipe shall be manufactured in accordance with AWWA C901-96 for sizes 1-1/4" thru 3" IPS diameters and to the requirements of ASTM D3035. Pipe 4" IPS and DIPS sizes 4" and above shall be manufactured to the requirements of ASTM F714 and AWWA C906-99.

5.7.2.5 Optional Service Identification Stripes for IPS Sized Pipe. IPS pipes shall be black. When requested as an option, IPS pipes shall have four, equally spaced, blue color stripes co-extruded into the pipe outside surface. Stripes printed on the pipe outside surface shall not be acceptable.

IC SURVEY	LUND PROFESSIONAL SPECIES	La	and Development - Public	ering & Construction, LLC Works - Water & Wastewater Utilities den, UT 84412 (801) 458-9647	40.0 Acre
(801) 729-1569 356548	EDWINA.	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cor
	4/27/24	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS:
	ATE OF UTAH	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: BOU
ey .		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cor
t		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

5.7.2.7Optional Color Shell. When requested as an option, a blue color shell co- extruded into the pipe outer surface shall permanently identify IPS or DIPS pipes.

5.7.2.8Polyethylene Fittings & Custom Fabrications. Polyethylene fittings and custom fabrications shall be molded or fabricated by the Approved Pipe Manufacturer. All fittings and custom fabrications shall be pressure rated for the same internal pressure rating as the mating pipe.

5.7.2.9Molded Fittings. Molded fittings shall be manufactured and tested in accordance with ASTM D 3261 and shall be so marked. Molded fittings shall be tested in accordance with AWWA C906.

5.7.2.9.1X-Ray Inspection. The Manufacturer shall submit samples from each molded fittings production lot to x-ray inspection.

5.7.2.10Fabricated Fittings. Fabricated fittings shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock or molded fittings. Fabricated fittings shall be rated for internal pressure service at least equal to the full service pressure rating of the mating pipe. Fabricated fittings shall be tested in accordance with AWWA C906.

5.7.2.11Polyethylene Flange Adapters. Flange adapters shall be made with sufficient throughbore length to be clamped in a butt fusion-joining machine without the use of a stub-end holder. The sealing surface of the flange adapter shall be machined with a series of small v-shaped grooves (serrations) to promote gasketless sealing, or restrain the gasket against blowout.

5.7.2.12Back-up Rings & Flange Bolts. Flange adapters shall be fitted with back-up rings that are pressure rated equal to or greater than the mating pipe.

The back-up ring bore shall be chamfered or radiused to provide clearance to the flange adapter radius. Flange bolts and nuts shall be Grade 3 or higher.

5.7.2.13MJ Adapters. MJ Adapters 4" thru 16" may be provided with optional Stainless Steel Stiffener upon request. MJ Adapters 14" and above shall be provided with Heavy Duty Back-up Ring Kits. All MJ adapters 18" and above must be provided with Stainless Steel stiffeners.

5.7.2.14Compliance Tests. Manufacturer's inspection and testing of the materials. In case of conflict with Manufacturer's certifications, the Contractor, Project Engineer, or Owner may request retesting by the Manufacturer or have retests performed by an outside testing service. All retesting shall be at the requestor's expense, and shall be performed in accordance with these Specifications.

5.7.3Joining

5.7.3.1Heat Fusion Joining. Joints between plain end pipes and fittings shall be made by butt fusion. Joints between the main and saddle branch fittings shall be made using saddle fusion. The butt fusion and saddle fusion procedures used shall be procedures that are recommended by the pipe and fitting Manufacturer. The Contractor shall ensure that persons making heat fusion joints have received training in the Manufacturer's recommended procedure. The Contractor shall maintain records of trained personnel, and shall certify that training was received not more than 6 months before commencing construction. External and internal beads shall not be removed.

5.7.3.1.1Butt Fusion of Unlike Wall Thickness. Butt fusion shall be performed between pipe ends, or pipe ends and fitting outlets that have the same outside diameter and are not different in wall thickness by more than one Standard DR, for example, SDR 13.5 to SDR 17, or SDR 11 to SDR 13.5. Transitions between unlike wall thickness greater than one SDR shall be made with a transition nipple (a short length of the heavier wall pipe with one end machined to the lighter wall) or by mechanical means or electrofusion. SDR's for polyethylene pipe are 7.3, 9, 11, 13.5, 17, 21, 26, 32.5 and 41.

5.7.3.1.2Heat Fusion Training Assistance. Upon request and at the requestor's expense, training personnel from the Manufacturer or his Representative shall be made available.

5.7.3.2 Joining by Other Means. Polyethylene pipe and fittings may be joined together or to other materials by means of (a) flanged connections (flange adapters and back-up rings), (b) mechanical couplings designed for joining polyethylene pipe or for joining polyethylene pipe to another material, (c) MJ Adapters or (d) electrofusion. When joining by other means, the installation instructions of the joining device manufacturer shall be observed.

5.7.3.2.1ID Stiffener and Restraint. A stiffener shall be installed in the bore of the polyethylene pipe when an OD compression mechanical coupling is used and when connecting plain end PE pipe to a mechanical joint pipe, fitting or appurtenance. External clamp and tie rod restraint shall be installed where PE

pipe is connected to the socket of a mechanical joint pipe, fitting or appurtenance except where an MJ Adapter is used.

5.7.3.3Branch Connections. Branch connections to the main shall be made with saddle fittings or tees. Polyethylene saddle fittings shall be saddle fused to the main pipe per 3.1.

# 5.7.4Installation

5.7.4.1General. When delivered, a receiving inspection shall be performed and any shipping damage shall be reported to the manufacturer within 7 days. Installation shall be in accordance with ASTM D 2774, manufacturer's recommendations and this specification. All necessary precautions shall be taken to ensure a safe working environment in accordance with all applicable safety codes and standards.

5.7.4.2Excavation. Trench excavations shall conform to the Drawings, as authorized in writing by the Project Engineer or his Approved Representative and in accordance with all applicable codes. The Contractor shall remove excess groundwater. Where necessary, trench walls shall be shored or reinforced, and all necessary precautions shall be taken to ensure a safe working environment.

5.7.4.3Large Diameter Fabricated Fittings. Not more than one plain-end connection of 16" IPS and larger fabricated directional fittings (elbows, tees, etc.) shall be butt fused to the end of a pipe length before placing the assembly into the trench. The remaining fitting connections shall be made in the trench using butt fusion, flange or other connection means in accordance with 3.2. Flange and other mechanical connections shall be assembled and tightened in accordance with the connection manufacturer's instructions and 4.4. Handling, lifting, moving or lowering a 16" IPS or larger fabricated fitting that is connected to more than one pipe length is prohibited. The installing contractor at his expense shall correct fitting damage caused by such improper handling.

5.7.4.4 Mechanical Joint & Flange Installation. Mechanical joint and flange connections shall be installed in accordance with the Manufacturer's recommended procedure. Primed ductile iron backup rings shall be furnished and installed at all connections permitting such. MJ Adapters and flanges shall be centered and aligned to the mating component before assembling and tightening bolts. In no case shall MJ gland or flange bolts be used to draw the connection into alignment. Bolt threads shall be lubricated, and flat washers should be used under the nuts. Bolts shall be evenly tightened according to the tightening pattern and torque step recommendations of the Manufacturer. At least 1 hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and torque step recommendations of the Manufacturer. The final tightening torque shall be as recommended by the Manufacturer. Bolts, nuts and washers shall be stainless steel and shall be liberally coated with a rubberized undercoating prior to placing backfill.

# Stagecoach Estates - 56 Lot Residential Development

# TAYLOR WEST WEBER WATER DISTRICT CONSTRUCTION SPECIFICATIONS

struction 1800 South 3800 West, West Weber, Utah undary Consultants / David E. Hawkes, PLS struction Approval: Weber County Engineering



5.7.4.5Foundation & Bedding. See Section 5.1, PIPELINE TRENCH EXCAVATION AND BACKFILL.

5.7.4.6Pipe Handling. When lifting with slings, only wide fabric choker slings capable of safely carrying the load shall be used to lift, move, or lower pipe and fittings. Wire rope and chain are prohibited. Slings shall be of sufficient capacity for the load, and shall be inspected before use. Worn or damaged equipment shall not be used. Under no circumstances shall the pipe or accessories be dropped into the trench. At all times when work is in progress, all open ends of the pipe and fittings shall be securely closed to the satisfaction of the ENGINEER, so that no water, earth, or other substance will enter the pipe or fittings.

5.7.4.7Backfilling. See Section 5.1, PIPELINE TRENCH EXCAVATION AND BACKFILL. During embedment placement and compaction, care shall be taken to ensure that the haunch areas below the pipe springline are completely filled and free of voids. At all times when work is in progress, all open ends of the pipe and fittings shall be securely closed to the satisfaction of the ENGINEER, so that no water, earth, or other substance will enter the pipe or fittings.

5.7.4.8Protection against shear and bending loads. In accordance with ASTM D 2774, connections shall be protected where an underground polyethylene branch or service pipe is joined to a branch fitting such as a service saddle, branch saddle or tapping tee on a main pipe, and where pipes enter or exit casings or walls. The area surrounding the connection shall be embedded in properly placed, compacted backfill, preferably in combination with a protective sleeve or other mechanical structural support to protect the polyethylene pipe against shear and bending loads.

5.7.4.9Final Backfilling. See Section 5.1, PIPELINE TRENCH EXCAVATION AND BACKFILL.

### 5.7.5Testing.

5.7.5.1Fusion Quality. The Contractor shall ensure the field set-up and operation of the fusion equipment, and the fusion procedure used by the Contractor's fusion operator while on site. Upon request by the Owner, the Contractor shall verify field fusion guality by making and testing a trial fusion. The trial fusion shall be allowed to cool completely; then test straps shall be cut out and bent strap tested in accordance with ASTM D 2657. If the bent strap test of the trial fusion fails at the joint, the field fusions represented by the trial fusion shall be rejected. The Contractor at his expense shall make all necessary corrections to equipment, set-up, operation and fusion procedure, and shall re-make the rejected fusions.

5.7.5.2Hydrostatic Leak Testing. This hydrostatic leak test procedure consists of filling, an initial expansion phase, a test phase, and depressurizing. There are two alternatives for the test phase. Leak testing shall be observed by the OWNER or ENGINEER.

5.7.5.2.1Filling. Fill the restrained test section completely with water.

WARNING – Ensure that there is no air trapped in the test section. Failure with entrapped air can result in explosive release and result in death or serious bodily injury. Use equipment vents at high points to remove air.

5.7.5.2.2 Initial Expansion Phase. Gradually pressurize the test section to test pressure, and maintain test pressure for three (3) hours. During the initial expansion phase, polyethylene pipe will expand slightly. Additional test liquid will be required to maintain pressure. It is not necessary to monitor the amount of water added during the initial expansion phase.

5.7.5.2.3Test Phase – Alternate 1. Immediately following the initial expansion phase, reduce test pressure by 10 psi, and stop adding test liquid. If test pressure remains steady (within 5% of the target value) for one (1) hour, no leakage is indicated.

5.7.5.2.4Test Phase – Alternate 2. This alternative is applicable when the test pressure is 150% of the system design pressure.

Immediately following the initial expansion phase, monitor the amount of make-up water required to maintain test pressure for two (2) hours. If the amount of make-up water needed to maintain test pressure does not exceed the amount given below, no leakage is indicated.

### L= (SxDxP(1/2))/148,000

### Where:

- L = Leakage, gallons per hour
- S = Length of pipe tested, in feet
- D = Nominal diameter of piping, inchesP = Average pressure during test, pounds per square inch x = multiplication symbol.

### End Section

5.8.1DESCRIPTION: This section of the specifications defines materials to be used in all portland cement concrete work and requirements for mixing, placing, finishing, and curing.

5.8.2MATERIALS: Materials used in portland cement concrete and reinforcing of portland cement concrete shall meet the following requirements:

5.8.2.1CEMENT: Portland cement shall be Type II or as approved by the Engineer and shall comply with the Standard Specification for Portland Cement, ASTM C-150. NEITHER POZZOLANS NOR SILICA FUME SHALL BE USED.

5.8.2.2AGGREGATES: Concrete aggregates shall conform to Tentative Specifications for Concrete Aggregates, ASTM C-33.

5.8.2.3WATER: Water used in mixing concrete shall be clean and free from oil, acid, salt, injurious amounts of alkali, organic matter or other deleterious substances.

5.8.2.4ENTRAINING AGENT: An air-entraining agent shall be used in all concrete exposed to the weather. The agent shall conform to ASTM Designation C-175 and C-260.

5.8.2.5ADMIXTURES: No admixtures unless approved by the Engineer. Calcium chloride shall not be used in reinforced concrete.

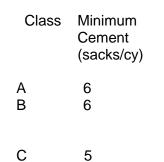
5.8.2.6FLY ASH: No fly ash shall be added without mix design approved by the Engineer.

5.8.2.7REINFORCED STEEL: All bar material used for reinforcement of concrete shall be intermediate grade steel free of rust conforming to the requirements of ASTM Designation A-615 GR-60 and shall be deformed in accordance with ASTM Designation A-305.

5.8.2.8WELDED WIRE FABRIC: Welded wire fabric for concrete reinforcement shall conform to the requirements of ASTM A-185.

Flowable Fill: Sand aggregate. If used as trench fill: Minimum compressive strength shall be 50 PSI and maximum compressive strength shall be 150 PSI.

If used for pipeline abandonment fill: Minimum compressive strength shall be 50 PSI. Self-consolidating concrete (also known by some suppliers as "pump prime") may be used at the contractor's option and cost, to improve pumpability and reduce the number of injection points.



Note: Above specifications contain 94 pound sacks of Portland Cement.

AGGREGATES: The maximum size of the aggregate shall be not larger than one-fifth of the narrowest dimension between forms within which the concrete is to be cast, nor larger than three-fourths of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms. For non-reinforced concrete slabs, the maximum size of aggregates shall not be larger than one- fourth the slab thickness.

WATER: Sufficient water shall be added to the mix to produce concrete with the minimum practicable slump. The slump of mechanically vibrated concrete shall not exceed four inches. NO concrete shall be placed with a slump in excess of five inches. The maximum permissible water-cement ratio (including free moisture on aggregates) shall be 5 and 5-3/4 gallons per bag of cement respectively for Class A and B air entrained concrete.

Course Aggregate Size (in.) 1-1/2 to 2-1/2

3/4 or 1 3/8 or 1/2

The air-entraining agent shall be added as liquid to the mixing water by means of mechanical equipment capable of accurate measurement and control.

5.8.3.1FORMS: Forms shall be substantially built and adequately braced to withstand the liquid weight of concrete. All linings, studding, walling and bracing shall be such as to prevent bulging, spreading, or loss of true alignment while pouring and displacement of concrete while setting. Metal forms shall be used for sidewalk work unless otherwise specified by the Engineer. All edge forms for sidewalk pavements, curbs, and gutters shall be of sufficient rigidity and adequately braced to accurately maintain line and grade. Prior to concrete placement, all forms shall be lightly coated with oil to prevent concrete adhesion to form materials.

Exposed vertical and horizontal edges of the concrete in structures shall be chamfered by the placing of molding in the forms or as directed by the Engineer and as indicated in the Drawings.

FORM STRIPPING: Forms shall remain in-place for at least the following time periods after completion of a concrete pour in a given section of forms:

Walls and columns:24 hours Roof deck:10 days

5.8.3.2JOINTS: Joints shall be provided for sidewalk and curb and gutter as follows:

SIDEWALKS: Shall have scribed joints at intervals of 4 feet which joints shall be approximately 3/16" wide and be approximately 1/4 of the total slab thickness. In addition, 1/2-inch expansion joints shall be provided at 50-foot intervals and at locations where sidewalks adjoin curbs or existing sidewalks, driveways, building walls or aprons. Expansion joints shall be provided at 4-foot intervals where manholes, valve boxes or meter boxes are located.

5.8.3.3REINFORCEMENT AND EMBEDDED ITEMS: Reinforcing steel shall be clean and free from rust, scale, paint, grease or other foreign matter which might impair the bond. It shall be accurately bent and shall be tied to prevent displacement when concrete is poured. Reinforcing steel shall be held in place by only metal or concrete ties, braces and supports. No steel shall extend from or be visible on any finished surface and shall have a minimum of 1 1/2" concrete cover. Bars shall be grade 60.

The Contractor shall use concrete chairs for holding the steel away from the subgrade, and spreader or other type bars for securing the steel in place. The spreader bars shall be not less than 3/8-inch in diameter.

5.8.3.4PREPARATIONS: Before batching and placing concrete, all equipment for mixing and transporting the concrete shall be cleaned, all debris and ice shall be removed from the places to be occupied by the concrete, forms shall be thoroughly wetted or oiled, and masonry filler units that will be in contact with concrete shall be well drenched and the reinforcements shall be thoroughly cleaned of ice or other coatings. Water shall be removed from spaces to receive concrete. When placing concrete on earth surfaces, the surfaces shall be free from frost, ice, mud, and water. When the subgrade surface is dry soil or pervious material, it shall be sprayed with water immediately before placing of concrete or shall be covered with waterproof sheathing paper or a plastic membrane. No concrete shall be placed until the surfaces have been inspected and approved by the Engineer or Inspector.

# COMPACTION: All subgrade and backfill materials shall be compacted in accordance with Section 5.1.3.10.

5.8.3.5CONCRETE MIXING: All concrete shall be ready-mixed and delivered in accordance with ASTM C-94. The concrete shall be mixed until there is a uniform distribution of the materials. Sufficient water shall be used in mixing concrete to produce a mixture which will flatten and quake when deposited in place, but not enough to cause it to flow. Sufficient water shall be used in concrete in which reinforcement is to be embedded, to produce a mixture which will flow sluggishly when worked and which, at the same time, can be conveyed from the mixer to the forms without segregation of aggregate. In no case shall the quantity of water used be sufficient to cause the collection of a surplus in the forms or exceed the maximum allowable slump as specified in 5.8.3.

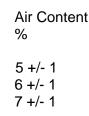
WEBER COUNTY ENGINEERING DEPARTMENT	SITE BOUNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 (801) 729-1569	SUPPROFESSIONAL SPECIAL	L	and Development - Public	ering & Construction, LLC c Works - Water & Wastewater Utilities jden, UT 84412 (801) 458-9647	40.0 Acre
FINAL SET APPROVED CONSTUCTION DRAWINGS	David E. Hawkes, PLS Utah No. 356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Co
		X 4/27/21	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS:
	DATE SURVEY / SUBMITTAL	A STATE OF UTAN	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bo
	1/03/2020 Site Boundary and Topographic Survey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Co
	3/4/2021 Weber County Surveyor's Record Plat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

5.8.3CONSTRUCTION: For the purpose of practical identification, concrete has been divided into four classes: Flowable fill, Class A, B, and C. Basic requirements and use for each class are defined as follows:

Minimum 28-day Comp. Strength (psi)	Primary Use
4000 3500	Reinforced Structural Concrete Sidewalks, curbs, and gutters, cross gutters, pavements, and non- reinforced footings and foundations
2500	Thrust blocks, anchors, mass concrete

All concrete shall also comply with the following requirements.

AIR-ENTRAINING: Air content for air-entrained concrete shall comply with the following:



5.8.3.6DEPOSITING: Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. The concrete placing shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the corners of forms and reinforcing bars. No concrete that has partially hardened or been contaminated by foreign material shall be deposited in the work, nor shall retempered concrete be used. No concrete shall be dropped more than 3 feet. Concrete delivered to the job site having a temperature that exceeds 90 degrees Fahrenheit shall not be placed. Concrete cooling methods during hot weather will be approved by the Engineer.

All concrete in structures shall be vibrator compacted during the operation of placing, and shall be thoroughly worked around reinforcement and embedded fixtures and into the corners of the forms.

CONSTRUCTION JOINTS: All construction joints shall be located and prepared as shown on the drawings or otherwise approved in writing by the Engineer. Unanticipated cold joints may be cause for rejection of the entire poured section in which the cold joint is located, at the sole discretion of the Engineer, in consultation with others. Rejected sections shall be demolished and re-poured by the Contractor as specified at no additional cost to the Owner.

5.8.3.7PLACING CONCRETE IN COLD WEATHER: No concrete shall be poured where the air temperature is lower than 40 degrees Fahrenheit, at a location where the concrete cannot be covered or protected from the surrounding air. Where concrete is poured below a temperature of 35 degrees Fahrenheit the ingredients of the concrete shall be heated so that the temperature of the mixture shall not be less than 50 degrees or more than 100 degrees Fahrenheit. Before mixing, the heated aggregates shall not exceed 125 degrees Fahrenheit and the temperature of the heated water shall not exceed 175 degrees Fahrenheit. Cement shall not be added while the temperature of the mixed aggregates and water is greater than 100 degrees Fahrenheit. When there is likelihood of freezing during the curing period, the concrete shall be protected by means of an insulating covering and/or heating the concrete for a period of not less than 7 days after placing. The temperature must be maintained at a minimum of 40 degrees Fahrenheit. Concrete shall not be placed on frozen soil. Equipment for protecting concrete from freezing shall be available at the job site prior to placing concrete. Particular care shall be exercised to protect edges and exposed corners from freezing. In the event heating is employed, care shall be taken to insure that no part of the concrete becomes dried out or is heated to temperatures above 90 degrees Fahrenheit. The housing, covering, or other protection used shall remain in place and intact at least 24 hours after the artificial heating is discontinued. Combustion heaters shall not be used during the first 24 hours unless precautions are taken to prevent exposure of the concrete to exhaust gases that contain carbon dioxide.

# 5.8.3.8FINISHING:

FORMED SURFACE FINISHES - Provide the following finishes unless indicated or shown otherwise on the drawings.

ROUGH FORM FINISH - Applies to all surfaces not exposed to view such as surfaces in contact with earth backfill. Repair defects and patch tie holes. Remove fins exceeding 1/4 inch in height. Otherwise leave surfaces with the texture imparted by the forms.

SMOOTH FORM FINISH - Applies to all exposed surfaces and interior surfaces of vaults and pits. Use form facing material to produce a smooth, hard, uniform surface. Support with backing capable of preventing specified deflection. Do not use material with raised grain, torn

surfaces, worn edges, patches, dents, or other defects which will impair the texture of the concrete surface. Keep the number of seams to a minimum. Repair and patch all tie holes and defects. Remove all fins.

GROUT CLEANED FINISH - Smooth rubbed finish shall be produced by "brush-off" sandblasting or grinding with a stone wheel or grinder on all exposed wall surfaces prior to filling holes to expose all holes near the surface of the concrete. The wall surface shall then be rubbed with a mortar consisting of one part portland cement and 1-1/2 parts of fine sand passing the 100 screen with enough water and an emulsified bonding agent to have the consistency of thick creme. The wall surface shall be thoroughly wetted. Apply the grout by rubbing it over the entire area with clean burlap, sponge rubber floats, or trowels. Surface shall be wiped clean and most cured.

SLAB FINISHES - Unless specified or otherwise shown on the drawings, apply finishes to slabs as follows:

FLOATED FINISH - Use for surfaces to be trowel finished or to be broom finished. After the concrete has been placed, consolidated, struck off, and leveled, do not work further until water sheen has disappeared and the surface has been stiffened. When water sheen has disappeared and surface has stiffened, float with a hand float or with a bladed power trowel equipped with float shoes, or with a powered disc float. During or after the first floating, planeness of surface shall be checked with a 10-ft. straightedge applied at not less than two differed angles. Cut down all high spots and fill all low spots to produce a surface level tolerance of 1/4 inch in 10 feet throughout. Then refloat immediately to a uniform sandy texture.

TROWELED FINISH - Use for interior floors intended as walking surfaces. The surface shall first be float-finished as specified above. Next, power trowel followed by hand troweling. The first troweling after power floating shall produce smooth surface which is free of defects but which may still show some trowel marks. Additional trowelings shall be done by hand after the surface has hardened. Accomplish final troweling when a ringing sound is produced as the trowel is moved over the surface. Thoroughly consolidate surface by the hand troweling until the finished surface is free of trowel marks, uniform in texture and appearance and level within a tolerance of 1/4 inch in 10 feet in all directions. On surfaces intended to support floor coverings, defects which show through the floor covering shall be removed by grinding.

BROOM OR BELT FINISH - Use for exterior horizontal walks and slabs. Immediately after the concrete has received a float finish as specified above, provide a coarse transverse scored texture by drawing a broom or burlap belt across the surface.

5.8.3.9CURING AND PROTECTION: As soon as the concrete has hardened sufficiently to prevent damage, the finished surface shall be protected for curing one of the following ways:

Application of a curing compound, conforming to "Specifications for Liquid Membrane- Forming Compounds for Curing Concrete" ASTM C-309. The compound shall be light in color and shall be applied in accordance with the manufacturers recommendations immediately after any water sheen, which may develop after finishing has disappeared from the concrete surface.

Ponding of water on the surface or continuous sprinkling. Application of light colored waterproof plastic materials, conforming to "Specifications for Waterproof Sheet Materials for Curing Concrete" ASTM C-171. placed and maintained in contact with the surface of the concrete. The freshly finished surface shall be protected from hot sun and drying winds until it can be sprinkled or covered as above specified. The concrete surface must not be damaged or pitted by rain. The contractor shall provide and use, when necessary, sufficient tarpaulins to completely cover all sections that have been placed within the preceding twelve (12) hours.

The Contractor shall erect and maintain suitable barriers to protect the finished surface. Any section damaged from traffic or other causes occurring prior to its official acceptance, shall be repaired or replaced by the Contractor at his own expense in accordance with these specifications.

Defective concrete conditions or surfaces shall be removed, replaced, or repaired, without further cost to the OWNER, in accordance with these specifications.

5.8.3.10CONCRETE TESTING: The Engineer may order the taking of concrete test cylinders to check the required compressive strengths. If taken, samples will be made in accordance with ASTM C172 and tested as follows:

a.Air Content: Test for air content shall be performed in accordance with ASTM C 173 or ASTM C 231. A minimum of 1 test shall be conducted each time a slump test is made.

b.Slump: At least 1 slump test shall be made on randomly selected batches of each mixture of concrete for every 50 cubic yards of ready-mixed concrete delivered to the job site. Also note the time batched at the plant and the starting time when unloading began at the site. Tests shall be performed in accordance with ASTM C

c.Temperature: Concrete and air temperatures shall be measured and recorded with each set of cylinders and the air temperature shall also be recorded when the air temperature at the site is 40 degrees F or below and/or 90 degrees F or above.

EVALUATION AND ACCEPTANCE OF CONCRETE

a. Frequency of Testing: Samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, nor less than once for each 50 cubic yards of concrete, nor less than once for each 3000 square feet of surface area for slabs or walls. If this sampling frequency results in less than 5 strength tests for a given class of concrete, tests shall be made from at least 5 randomly selected trucks or from each truck if fewer than 5 truck loads are used. Field cured specimens for determining form removal time or when a structure may be put in service shall be made in numbers directed to check the adequacy of curing and protection of concrete in the structure. The specimens shall be removed from the molds at the age of 24 hours and shall be

cured and protected, insofar as practicable, in the same manner as that given to the portion of the structure the samples represent.

b.Testing Procedures: Cylinders for acceptance tests shall be molded and cured in accordance with ASTM C 31. Cylinders shall be tested in accordance with ASTM C 39. A strength test shall be the average of the strengths of two cylinders made from the same sample of concrete and tested at 28 days or at another specified test age.

c.Evaluation of Results: Concrete specified on the basis of compressive strength will be considered satisfactory if the averages of all sets of three consecutive strength test results equal or exceed the specified strength and no individual strength test result falls below the required strength by more than 500 pounds per square inch.

d.Unless noted otherwise, make a minimum of four (4) concrete cylinders each time a test is required. When concrete is being placed in suspended slabs, beams and retaining walls make two (2) extra cylinders that must be cured on site. The extra cylinders will be used to determine when to remove forms and/or when to backfill.

In-place concrete may be cored for testing. Cost of all laboratory testing shall be the responsibility of the Owner. Any retesting required because of test failures shall be the responsibility of the Contractor. All concrete delivered to the job site shall be accompanied by a ticket specifying: bag mix, air content, etc. Said ticket shall be given to the Engineer's Inspector who may field check slump and air entrainment compliance.

5.8.3.11 Miscellaneous: All other items, including, but not limited to, waterstops and joint sealant, shall be as shown on the Drawings.

End of Section

SECTION 5.9 EARTHWORK

5.9.1DESCRIPTION: Extent of earthwork is indicated on drawings. Preparation of bedding of pipe and trenching is included in Section 5.1 "Trench Excavation and Backfill".

"Excavation" consists of removal of material encountered to subgrade elevations indicated and subsequent relocation of materials removed. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. "Embankment" includes compacted backfill in specified lifts and densities.

A copy of the geotechnical report prepared for this project as appended to this specification book for the information of the CONTRACTOR.

5.9.2MATERIALS:

5.9.2.1SATISFACTORY MATERIALS: Materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW and SP.

5.9.2.2UNSATISFACTORY SOIL MATERIALS: Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classifications groups GC, SC, ML, CL, CH, OL, OH and PT.

5.9.2.3STRUCTURAL FILL: Structural fill for sub-grade shall be a well-graded material, either natural or crushed, free from vegetable material and lumps or balls of clay. The 3-inch minus structural fill shall consist of well-graded sandy gravels and 5% to 15% fines (materials passing a No. 200 sieve) by weight.

The plasticity index of the fines shall not exceed 15 and the liquid limit shall not exceed 35. Clean gravel ranging from pea gravel to 6 inches with less than 5% fines and sand combined may alternatively be used as structural fill. All fill soils shall be free of topsoil, highly organic material, frozen and other deleterious materials.

5.9.2.4BACKFILL AND FILL MATERIALS: Satisfactory soil materials free of clay, rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetable and other deleterious matter.

5.9.2.5COMPACTION TESTING: Owner may employ at Owners Expense, testing laboratory to perform soil testing and inspection service for quality control testing during earthwork operations.

5.9.2.6SITE CONDITIONS: Data on indicated subsurface conditioned at the end of this section are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that Owner will not be responsible for interpretations or conclusions drawn therefrom by Contractor. Data is made available for convenience of Contractor. Contractor may make additional test borings and other exploratory operations at no cost to Owner.

5.9.3CONSTRUCTION: Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of utility owner.

# Stagecoach Estates - 56 Lot Residential Development

# TAYLOR WEST WEBER WATER DISTRICT CONSTRUCTION SPECIFICATIONS

struction 1800 South 3800 West, West Weber, Utah undary Consultants / David E. Hawkes, PLS onstruction Approval: Weber County Engineering



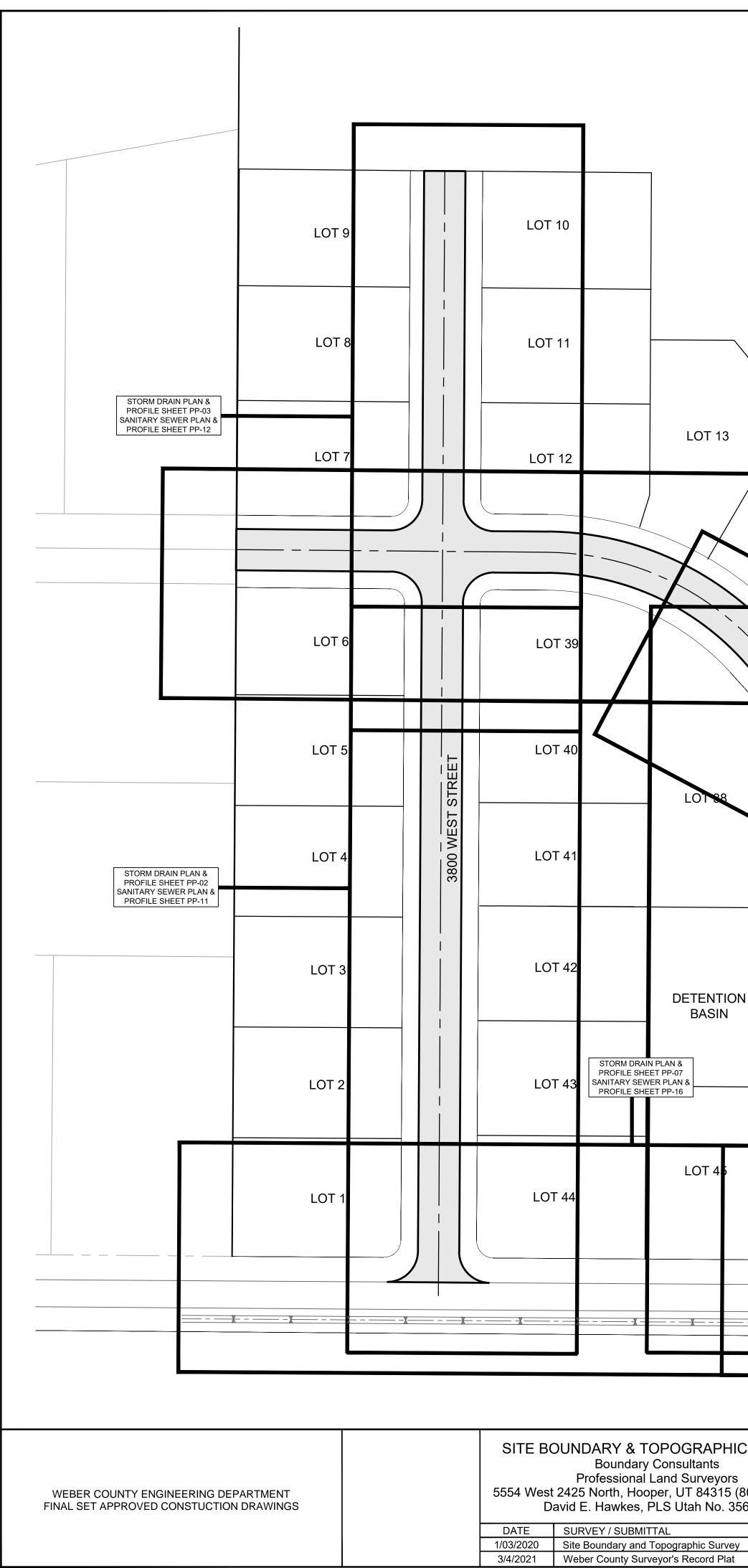
	DATE SURVE	EY / SUBMITTAL undary and Topographic Survey	AIZA ZA	7/25/2020 9/30/2020 1/20/2021	EH Christensen, SE, PE EH Christensen, SE, PE EH Christensen, SE, PE		GENERAL ADDRESS: 1 LAND SURVEYOR: Bour Technical Review & Cons
/EBER COUNTY ENGINEERING DEPARTMENT AL SET APPROVED CONSTUCTION DRAWINGS	ا Prot 5554 West 2425 N	ARY & TOPOGRAPHIC SURVEY Boundary Consultants fessional Land Surveyors lorth, Hooper, UT 84315 (801) 729-1569 Hawkes, PLS Utah No. 356548	EDWINH.	Lai	nd Development - Publi P.O. Box 13059 Og REVIEWED	ering & Construction, LLC Works - Water & Wastewater Utilities den, UT 84412 (801) 458-9647 SUBMITTAL	40.0 Acre
		25 26 27 26		2			
material and waste materials as herein specified.							
5.9.3.7MATERIAL STORAGE Stockpile satisfactory excavate backfill or fill. Place, grade and shape stockpiles for proper d from edge of excavations. Do not store within drip line of tree	rainage. Locate and retain soil materials away						
Establish and maintain temporary drainage ditches and othe rain water and water removed from excavations to collecting temporary drainage ditches.		End of Section					
undercutting footings, and soil changes detrimental to stabilit maintain pumps, well points, sumps, suction and discharge li necessary to convey water away from excavations.	y of subgrades and foundations. Provide and	Removal from Owner's Property: Remove wa and debris, and dispose of it off Owner's prop	ste materials, including unacce				
5.9.3.6DEWATERING: Prevent surface water and subsurfac and from flooding project site and surrounding area. Do not allow water to accumulate in excavations. Remove w		5.9.3.15DISPOSAL OF EXCESS AND WAST Removal to Designated Areas on Owner's Pr designated soil storage areas on Owner's pro	operty: Transport acceptable e				
Maintain shoring and bracing in excavations regardless of tin shoring and bracing as excavation progresses.		Restore appearance, quality, and condition o of restoration to greatest extent possible.		acent work, and el	minate evidence		
Establish requirements for trench shoring and bracing to con urisdiction.		Settling: Where settling is measurable or obs remove surface (pavement, lawn or other finite pattern and condition of the settern appropriate guality, and condition of the settern approximation of the settern approximat	sh), add backfill material, comp	pact, and replace s	urface treatment.		
5.9.3.5SHORING AND BRACING: Provide materials for shore stringers and cross-braces, in good serviceable condition.		Reconditioning Compacted Areas: Where sul completed compacted areas, scarify surface, construction.					
Maintain sides and slopes of excavations in safe condition un		Protection of Graded Areas: Protect newly gr Repair and re-establish grades in settled, ero	ded, and rutted areas to specif	fied tolerances.			
5.9.3.4STABILITY OF EXCAVATIONS: Slope sides of excave having jurisdiction. Shore and brace where sloping is not pose material excavated.		5.9.3.14MAINTENANCE:					
replace excavated materials are encountered at required s replace excavated material as directed by Engineer. Remova directed will be paid on basis of contract conditions relative to	al of unsuitable material and its replacement as	Compaction:After grading, compact subgrade or relative density for each area classification	surfaces to the depth and ind		of maximum dry		
Additional Excavation: When excavation has reached require make an inspection of conditions. If unsuitable bearing materials are encountered at required s		Finish surfaces free from irregular surface ch Ballast and Sub-Ballast: Shape surface of are with finish surface not more than 2 inches ab	eas under Ballast and Sub-Ball	, 0	nd cross-section,		
Elsewhere, backfill and compact unauthorized excavations a classification, unless otherwise directed by Engineer.		transition areas. Smooth finished surface with between point s where elevations are indicate Finish surfaces free from irregular surface ch	ed, or between such points and		eis ol siohes		
elevation of footing or base to excavation bottom, without alto be used to bring elevations to proper position, when accepta	ering required top elevation. Lean concrete fill may ble to Engineer.	uniformly around structure, piping or conduit to 5.9.3.13GRADING: Uniformly grade areas with transition areas. Smooth finished surface with	thin limits of grading under this	s section including			
dimensions without specific direction of Engineer. Unauthoriz by Engineer, shall be at Contractor's expense. Under footings, foundation bases, or retaining walls, fill unau	thorized excavation by extending indicated bottom	Do not place backfill or fill material on surface Place backfill and fill materials evenly adjace to prevent wedging action of backfill against s	nt to structures, piping or conductures or displacement of p	uit to required elev iping or conduit by			
required. Under slabs on grade, 6 inches below bottom of co Unauthorized Excavation - Consists of removal of materials I	ncrete slab. beyond indicated subgrade elevations or	Before compaction, moisten or aerate each la each la each layer to required percentage of maximu	iyer as necessary to provide o n dry density or relative dry de	ensity for each area			
Two feet outside of concrete work for which forms are require footings. In pipe trenches, 6 inches below invert elevation of but not less than 3 feet minimum trench width. Neat outside	pipe and 2 feet wider than inside diameter of pipe,	5.9.3.12PLACEMENT AND COMPACTION: I loose depth for material compacted by heavy for material compacted by hand- operated tar	compaction equipment and no				
he Engineer. Such excavation will be paid on basis of contra Rock Payment Lines are limited to the following:		When existing ground surface has a density l classification, break up ground surface, pulve compact to required depth and percentage of	rize, moisture-condition to opti				
of material encountered will be classified as earth excavation Do not perform rock excavation work until material to be exca	avated has been cross- sectioned and classified by	Plow, strip, or break-up sloped surfaces steep existing surface.	per than I vertical to 4 horizonta	al so that fill mater	al will bond with		
Typical of materials classified as rock are boulders 1/2 cu. yo rock-hard cementitious aggregate deposits. Intermittent drilling, blasting or ripping performed to increase		Inspection, testing, approval, and recording lo 5.9.3.11GROUND SURFACE PREPARATIO unsatisfactory materials, obstructions, and de	N: Remove vegetation, debris,		lacement of fills		
encountered, which cannot be dislodged and excavated with equipment without drilling, blasting or ripping.		Acceptances of construction below finish grad			aterproofing, and		
or width are classified as open excavation. Rock Excavation in Open Excavations - Includes removal an	d disposal of materials and obstructions	Backfill excavations as promptly as work perr	•	Ū			
Rock Excavation in Trenches and Pits - Includes removal an encountered which cannot be excavated with a 1.0 cubic yar track-mounted power excavator equivalent to Caterpillar Moo power and 30,000 lb. drawbar pull. Trenches in excess of 10	d (heaped) capacity, 42 inch wide bucket on del 215, rated at not less than 90 HP flywheel	Sub-ballast, use structural fill material, or sati Under Ballast, use sub-ballast material.	sfactory excavated or borrow r	naterial, or combir	ation of both.		
Earth Excavation - Includes excavation of pavements and oth underground structures, utilities and other items indicated to and other materials encountered that are not classified as ro	be demolished and removed; together with earth	5.9.3.10BACKFILL AND FILL: Place accepta depth) and compact each layer prior to place classification listed below.					
5.9.3.3EXCAVATION CLASSIFICATIONS: The following cla excavation is encountered in work:		Soil material that has been removed because and allowed to dry. Assist drying by dicing, has satisfactory value.	• •		•		
work. Protect structures, utilities, sidewalks, pavements, and lateral movement, undermining, washout and other hazards	other facilities from damage caused by settlement,	Remove and replace, or scarify and air dry, s density.	oil material that is too wet to pe	ermit compaction t	o specified		
f the use of explosives is necessary. 5.9.3.2PROTECTIONS OF PERSONS AND PROPERTY: Ba		uniformly apply water to surface of subgrade, water appearing on surface during or subseq	or layer of soil material. Apply	water in manner t			
5.9.3.1EXPLOSIVES: The use of explosives is not permitted OWNER and any and all Authorities Having Jurisdiction over Procedures and liabilities as outlined in Section 5.1.3.3, Solid	the use of explosives.	Sub-Grade:Compact top 6 inches of subgrad modified proctor density (ASTM D 1557). Moisture Control: Where subgrade or layer of					
Demolish and completely remove from site any and all existin Coordinate with utility companies for shut-off of services if lin	les are active.	sub-ballast at 95% maximum modified procto one lift shall not exceed 6-inches.		·			
tility.	written notice to proceed before interrupting any	specified for each area classification indicate Structural Fill and Sub-Ballast: Compact top 8	d below. B inches of subgrade and each	layer of structural	fill material or		
neurista minimum of 40 kours action to Explanate and social		5.9.3.9COMPACTION: Control soil compaction	on during construction providing	a minimum percer	tage of density		

Stagecoach Estates e - 56 Lot Residential Development

TAYLOR WEST WEBER WATER DISTRICT CONSTRUCTION SPECIFICATIONS

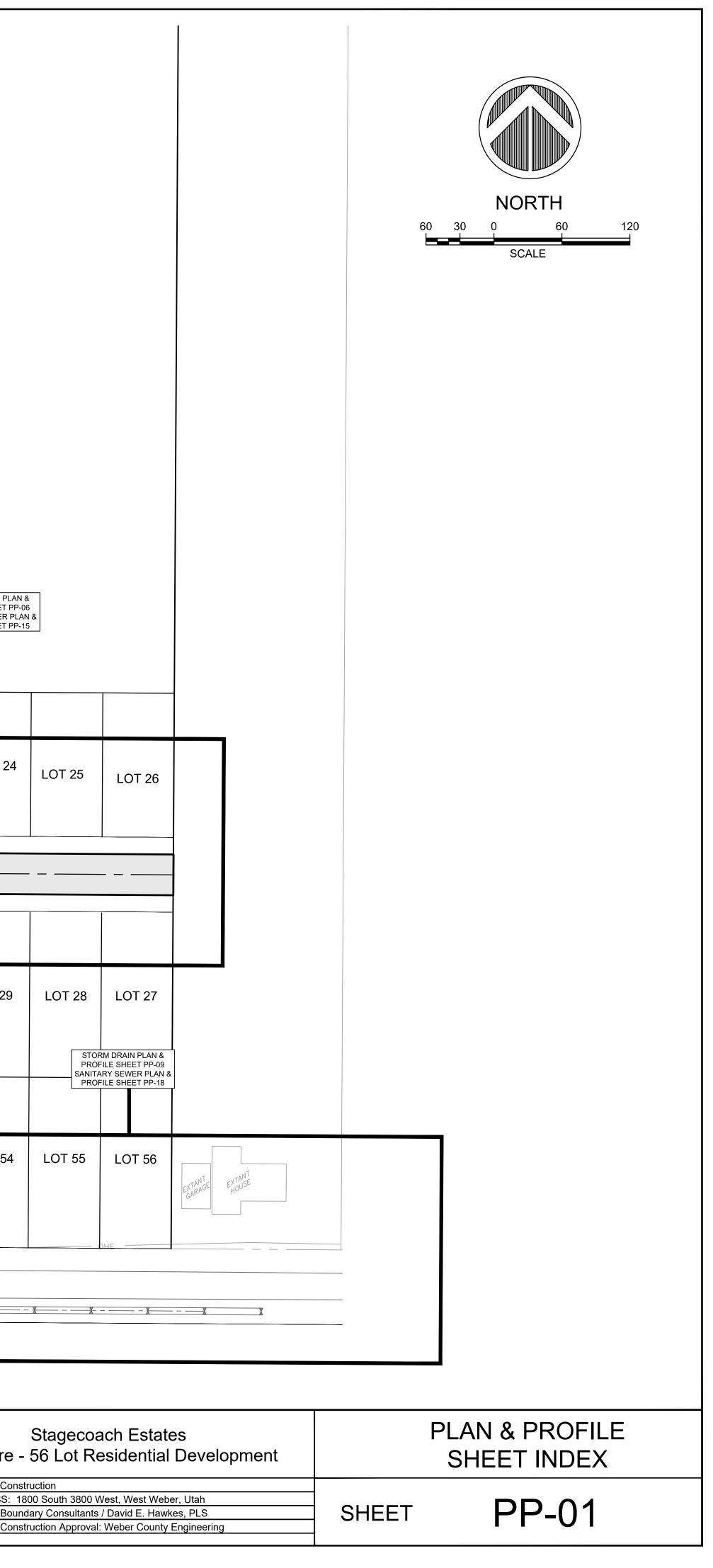
onstruction S: 1800 South 3800 West, West Weber, Utah Boundary Consultants / David E. Hawkes, PLS onstruction Approval: Weber County Engineering



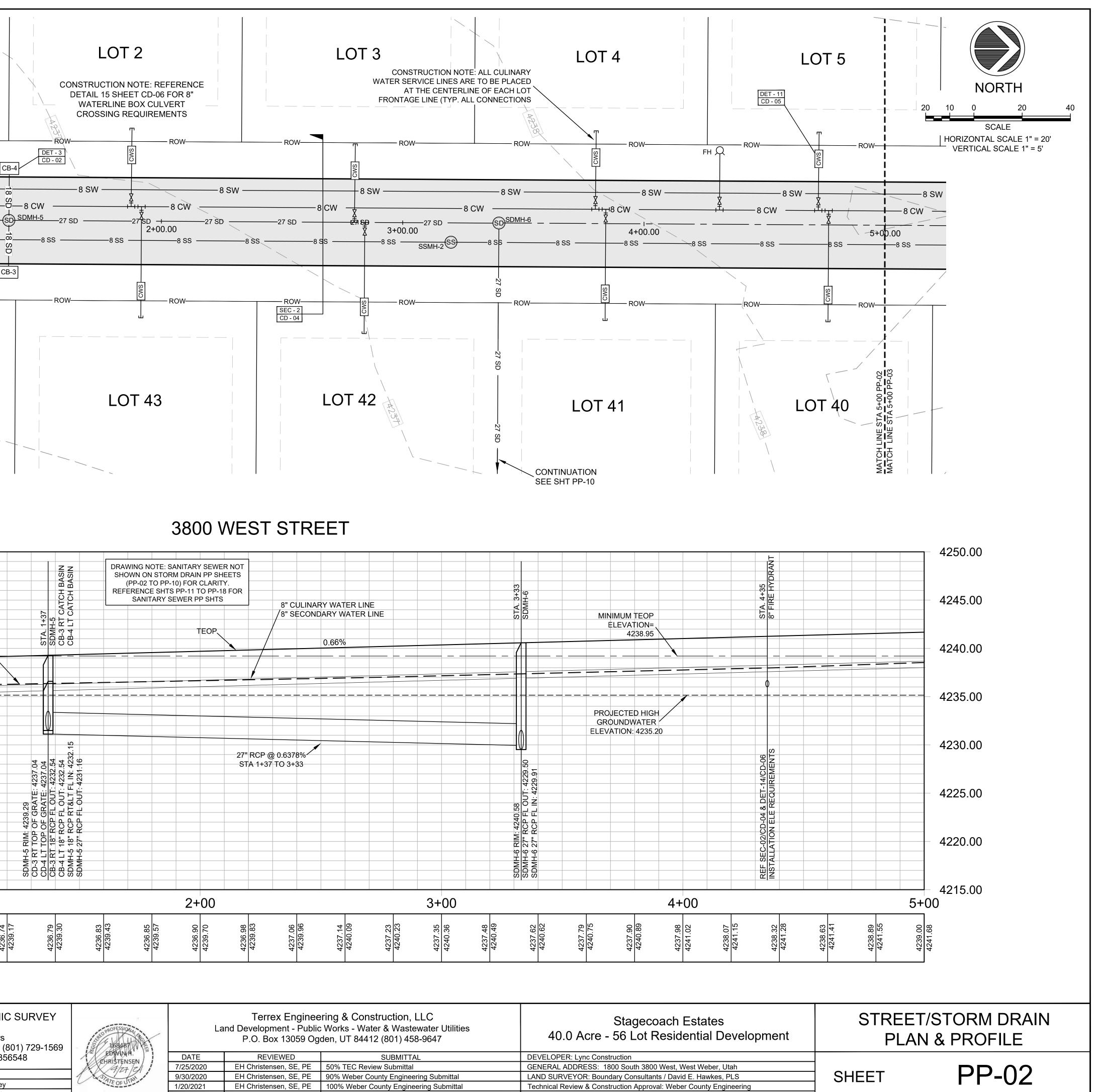


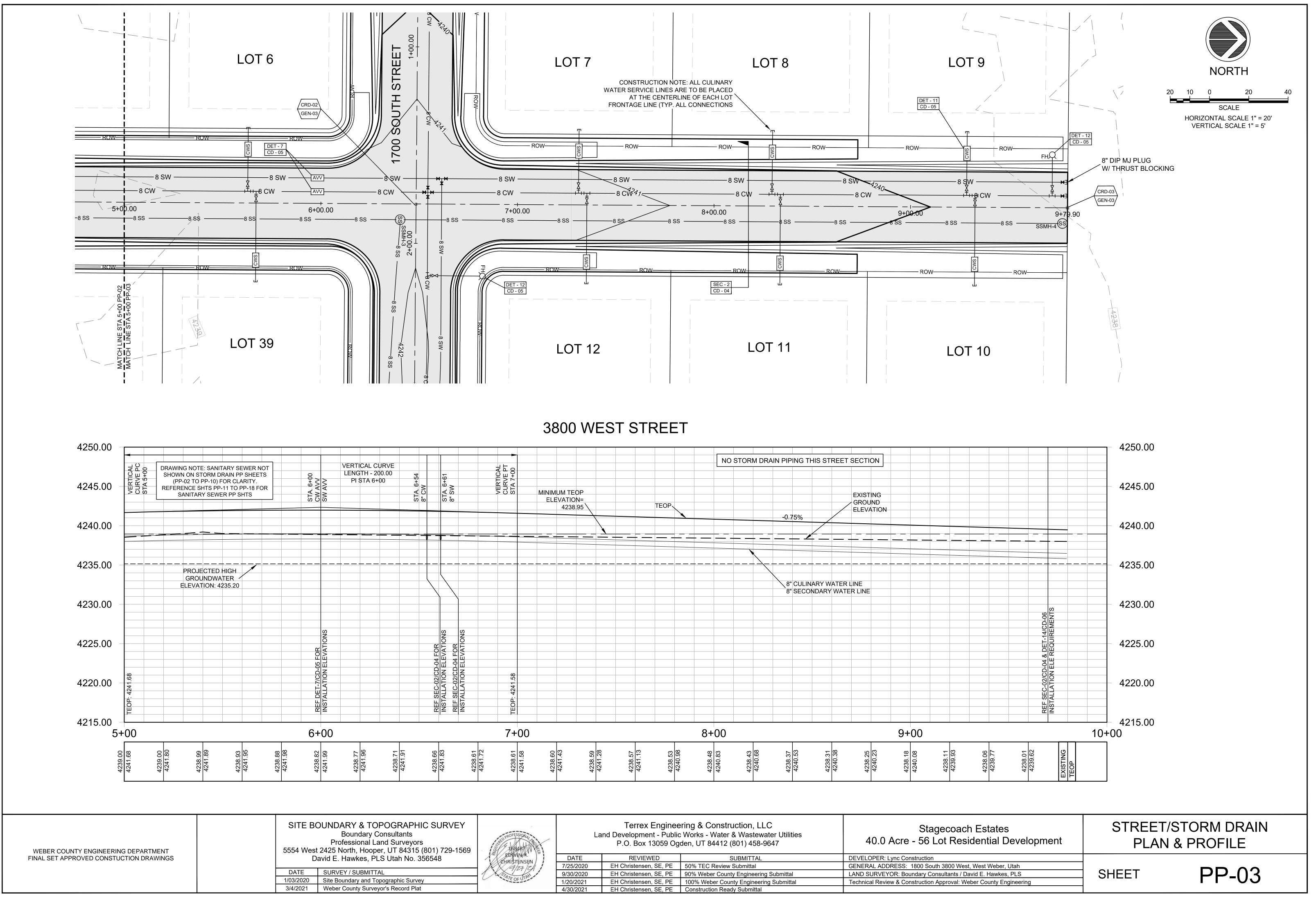
3									
	LOT 14	PROFII SANITAR	A DRAIN PLAN & LE SHEET PP-04 Y SEWER PLAN & LE SHEET PP-13 STORM DRAIN PLAN & PROFILE SHEET PP-05					PR SANI	ORM DRAIN PLAN OFILE SHEET PP- TARY SEWER PLA
			SANITARY SEWER PLAN & PROFILE SHEET PP-14					PR	OFILE SHEET PP-
~		LOT 16	LDT 17 LOT 18	LOT 19	LOT 20	LOT 21	LOT 22	LOT 23	LOT 24
							1700-175	0 SOUTH S	 TREET
	LOT 37								
ION N		LOT 36 STORM DRAIN PLAN & PROFILE SHEET PP-10	SANITAR'	LOT 34	LOT 36	LOT 32	LOT 31	LOT 30	LOT 29
		PROFILE SHEET PP-10	PROFIL	E SHEET PP-17					
	LOT 46	LOT 47	LOT 48	LOT 49	LO <sup>T</sup> 50	LOT 51	LOT 52	LOT 53	LOT 54
			1800 SOUTH S	STREET					
X	XX		<u></u>	<b>X</b>		<u> </u>	X		

HIC SURVEY rs 5 (801) 729-1569	440 PROFESS/91/4/ 946	La	and Development - Public	ering & Construction, LLC Works - Water & Wastewater Utilities den, UT 84412 (801) 458-9647	40.0 Acre
356548	PUPUTENCEAL	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons
	4/77 CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 1
	1 X STA	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bour
/ey	EOFU	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

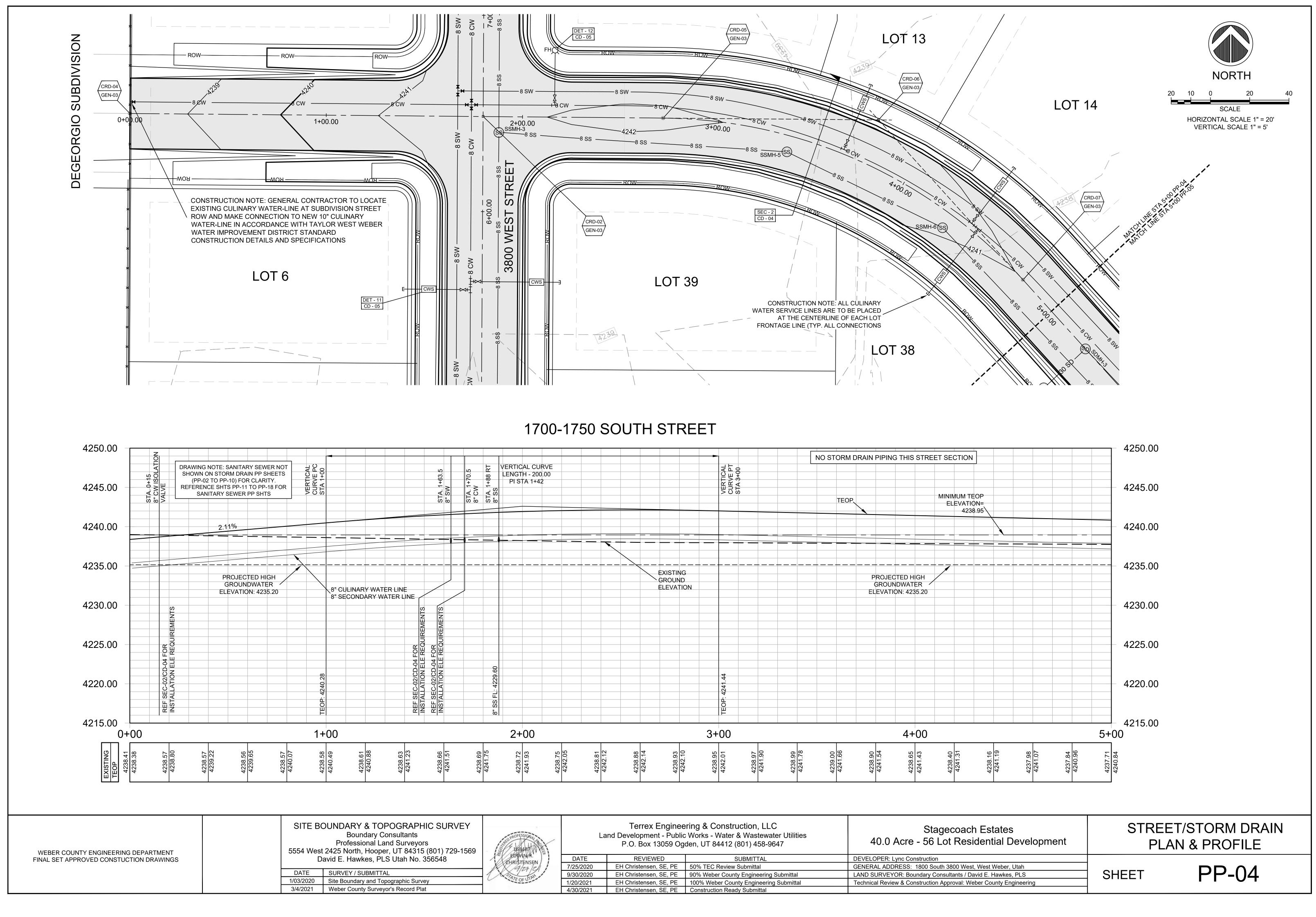


EXISTING WEBER	RUCTION STANDARDS $POW_{FH}$		WATER SERVIC AT TH FRONTAGE L ROW ROW 8 SW 8 SW 27 SD 27 SD 27 SD 27 SD 27 SD 27 SD 3+00.00	LOT JCTION NOTE: ALL CULINARY CE LINES ARE TO BE PLACED IE CENTERLINE OF EACH LOT INE (TYP. ALL CONNECTIONS ROW ROW 8 SW 8 SW 8 SW 8 SW 8 SW 8 SW 8 SW 8 SS 8 S
MJ PLUG MJ PLUG Rov Rov HI HI HI HI HI		ow	LOT 42	ROW NY SO NY S
4250.00	и ш ш Е	3800 W	/EST STREET	
454000       8" SW 45° ANGLE         8" SW 45° ANGLE       8" SW 45° ANGLE	8" SW 45° ANGLE         8" SY 45° ANGLE         8" STA. 0+40         8" SY 45° ANGLE         8" STA. 0+60 LT         8" STA. 0+60 LT <td>Z Z       DRAWING NOTE: SANITARY SEWER I         Ø Ø Ø       SHOWN ON STORM DRAIN PP SHEE         Ø Ø Ø       (PP-02 TO PP-10) FOR CLARITY.         REFERENCE SHTS PP-11 TO PP-18 F         SANITARY SEWER PP SHTS         D D D D         D D         <td< td=""><td>ETS</td><td></td></td<></td>	Z Z       DRAWING NOTE: SANITARY SEWER I         Ø Ø Ø       SHOWN ON STORM DRAIN PP SHEE         Ø Ø Ø       (PP-02 TO PP-10) FOR CLARITY.         REFERENCE SHTS PP-11 TO PP-18 F         SANITARY SEWER PP SHTS         D D D D         D D <td< td=""><td>ETS</td><td></td></td<>	ETS	
4235.00				
4230.00       STA. (0+08.00)         CW 45° ANGLE       FL: 4234.50         FL: 4234.50       STA. (0+05.00)         CW 45° ANGLE       FL: 4231.50         4225.00       STA. (0+13.75)         4225.00       CW 45° ANGLE	:: 4225.44 5° ANGLE FL: 4235.02 5° ANGLE FL: 4235.02 7 TOP OF GRATE: 4237.04 T TOP OF GRATE: 4237.04 T TOP OF GRATE: 4237.04 T TOP OF GRATE: 4237.04	DUT: 4232.54 < FL IN: 4232.15 DUT: 4231.16	27" RCP @ 0.6378% STA 1+37 TO 3+33	PROJ
4220 00 + + + + + + + + + + + + + + + + +	: 4225.44 5° ANGLE FL: 5° ANGLE FL: 5° ANGLE FL: 833 5° ANGLE FL: 7 ANGLE FL: 7 ANGLE FL: 7 TOP OF GR	18" RCP FL ( 27" RCP RT8 27" RCP RT8	Image: Sector	5 RIM: 4240.58 5 27" RCP FL OUT: 4229.5 5 27" RCP FL IN: 4229.91
FL: 4222:3     00:0771       FL: 4222:3     12" SW FL       8" SW 45°     8" SW 45°       8" SW 45°     8" SW 45°	8" SS FL:	CB-4 LT SDMH-5 SDMH-5 CB-1-5 SDMH-5 SDM SDM SDM SDM SDM SDM SDM SDM SDM SDM		
4215.00 -0+50 0+00	1+00	2+00		3+00
EXISTING 1237.43 4238.51 4238.51 4238.64	4236.77 4236.77 4238.91 4236.69 4236.69 4236.69 4236.74 4239.04	4239.30 4236.83 4239.43 4236.85 4236.85 4236.90 4236.90	4236.98 4239.83 4237.06 4239.96 4240.09 4240.09 4240.09 4240.23	4237.35 4240.36 4240.49 4240.49 4240.62 4240.62 4240.62 4240.62
	SITE BOUNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors	Land	Terrex Engineering & Construction, LL d Development - Public Works - Water & Wastewa P.O. Box 13059 Ogden, UT 84412 (801) 458-9	ater Utilities
WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS	5554 West 2425 North, Hooper, UT 84315 (801) 729-156 David E. Hawkes, PLS Utah No. 356548	CHRISTENSEN DATE 7/25/2020	REVIEWEDSUBMITTALEH Christensen, SE, PE50% TEC Review Submittal	DEVELOPER: Lync Constru GENERAL ADDRESS: 180
	DATE     SORVET/SOBMITIAL       1/03/2020     Site Boundary and Topographic Survey       3/4/2021     Weber County Surveyor's Record Plat	1/20/2021	EH Christensen, SE, PE90% Weber County EngineeringEH Christensen, SE, PE100% Weber County EngineeringEH Christensen, SE, PEConstruction Ready Submittal	

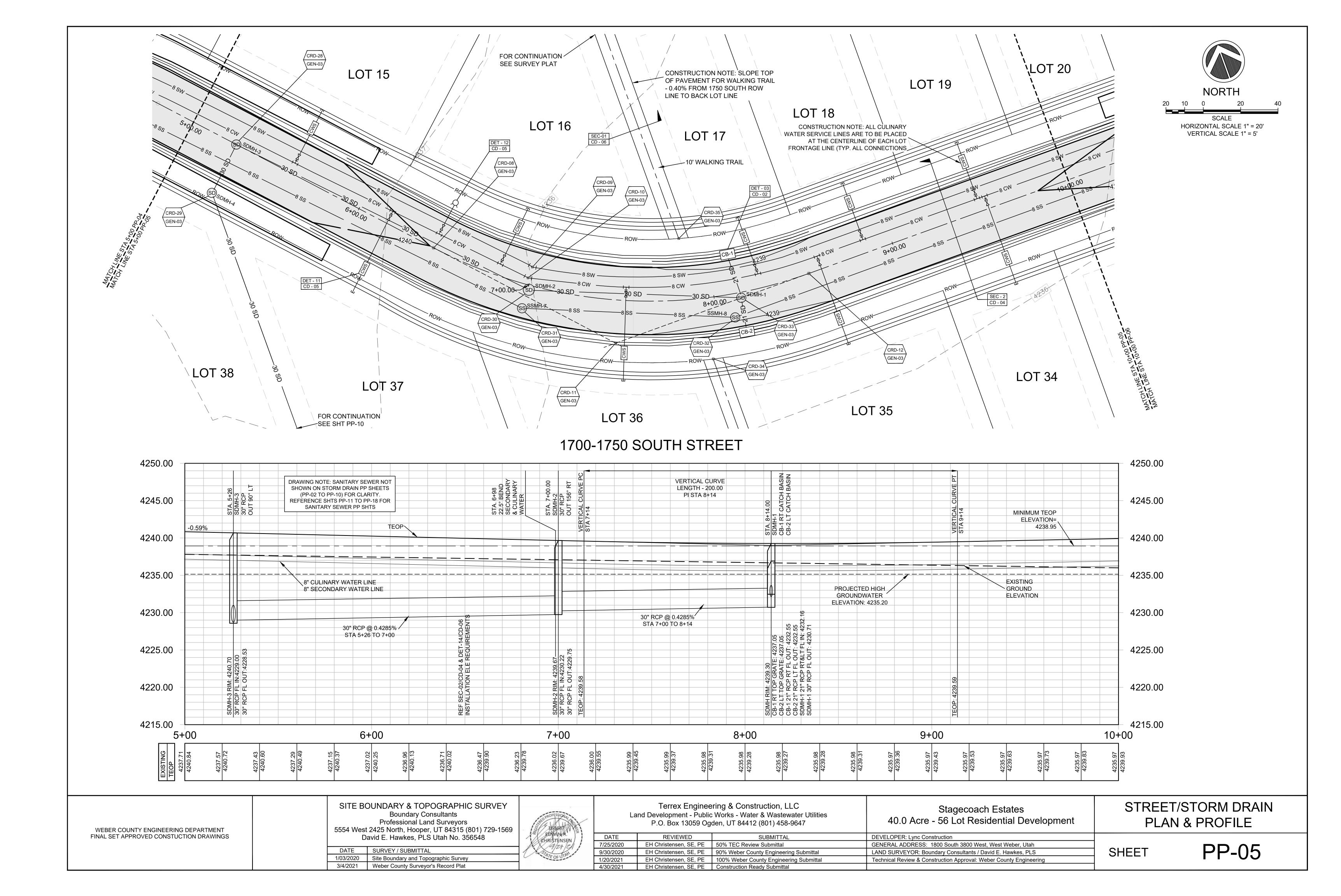


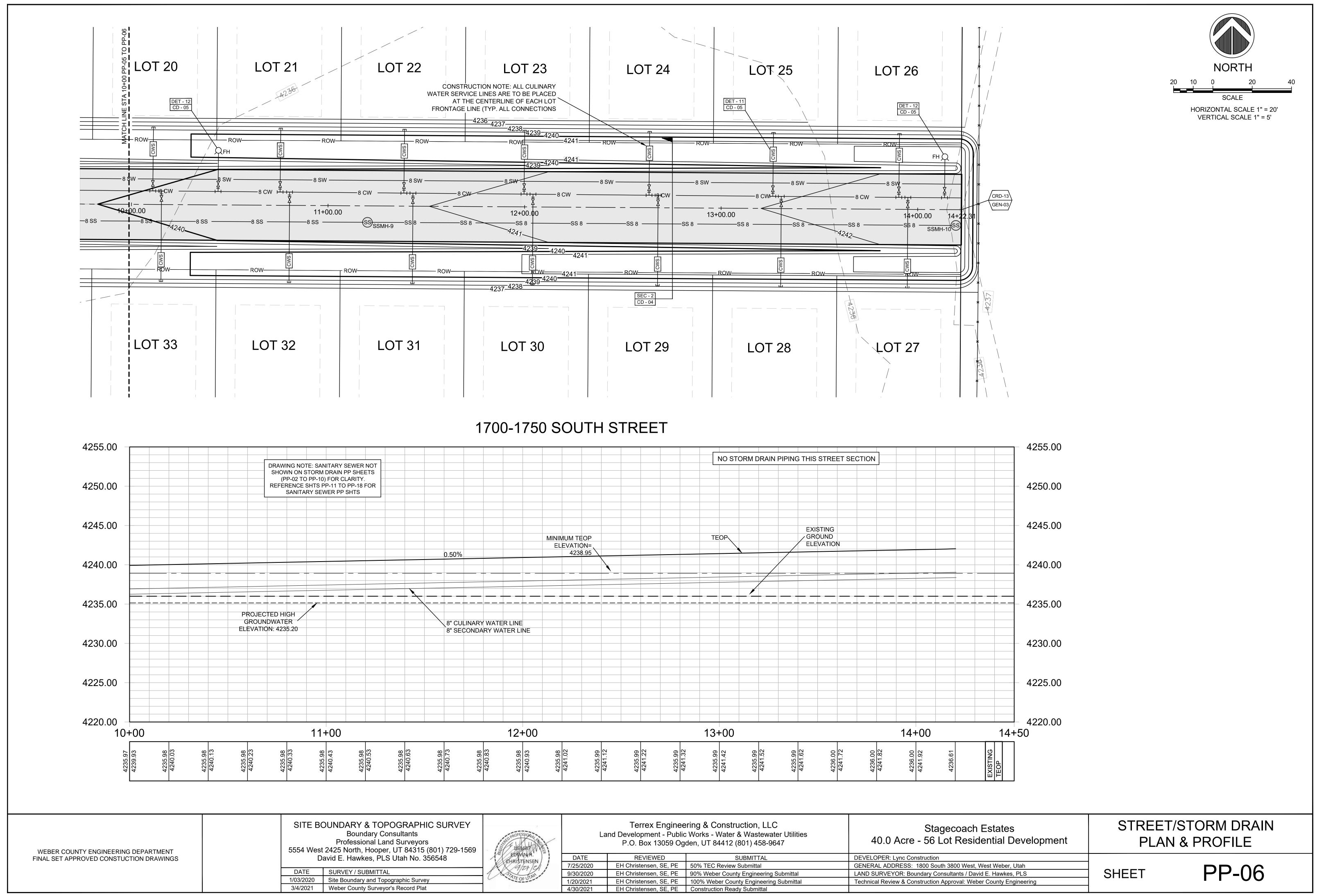


HIC SURVEY ors 5 (801) 729-1569	SUD PROFESSION AVE	L	Terrex Engineering & Construction, LLC Land Development - Public Works - Water & Wastewater Utilities P.O. Box 13059 Ogden, UT 84412 (801) 458-9647				
356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons		
	A A 77 CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18		
	1 STATE SIN	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Boun		
/ey	EOFU	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons		
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal			

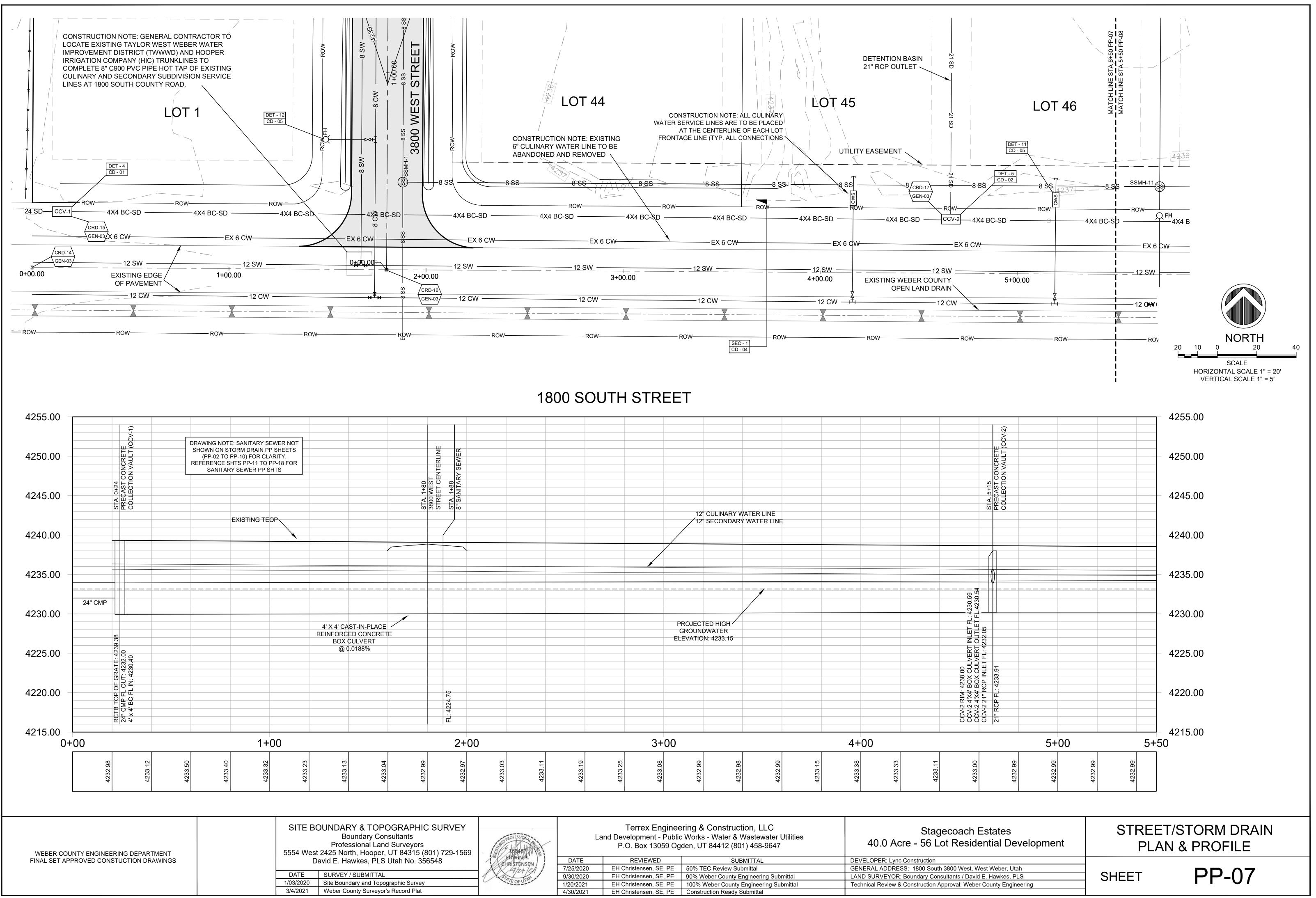


HIC SURVEY rs 5 (801) 729-1569	SEO PROFESSION ALS	L	40.0 Acre -			
356548	EDIMINIA.	DATE	DATE REVIEWED SUBMITTAL			
	4/77 CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18	
	1 X STATISTICS	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bound	
ey	EOFU	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Const	
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal		

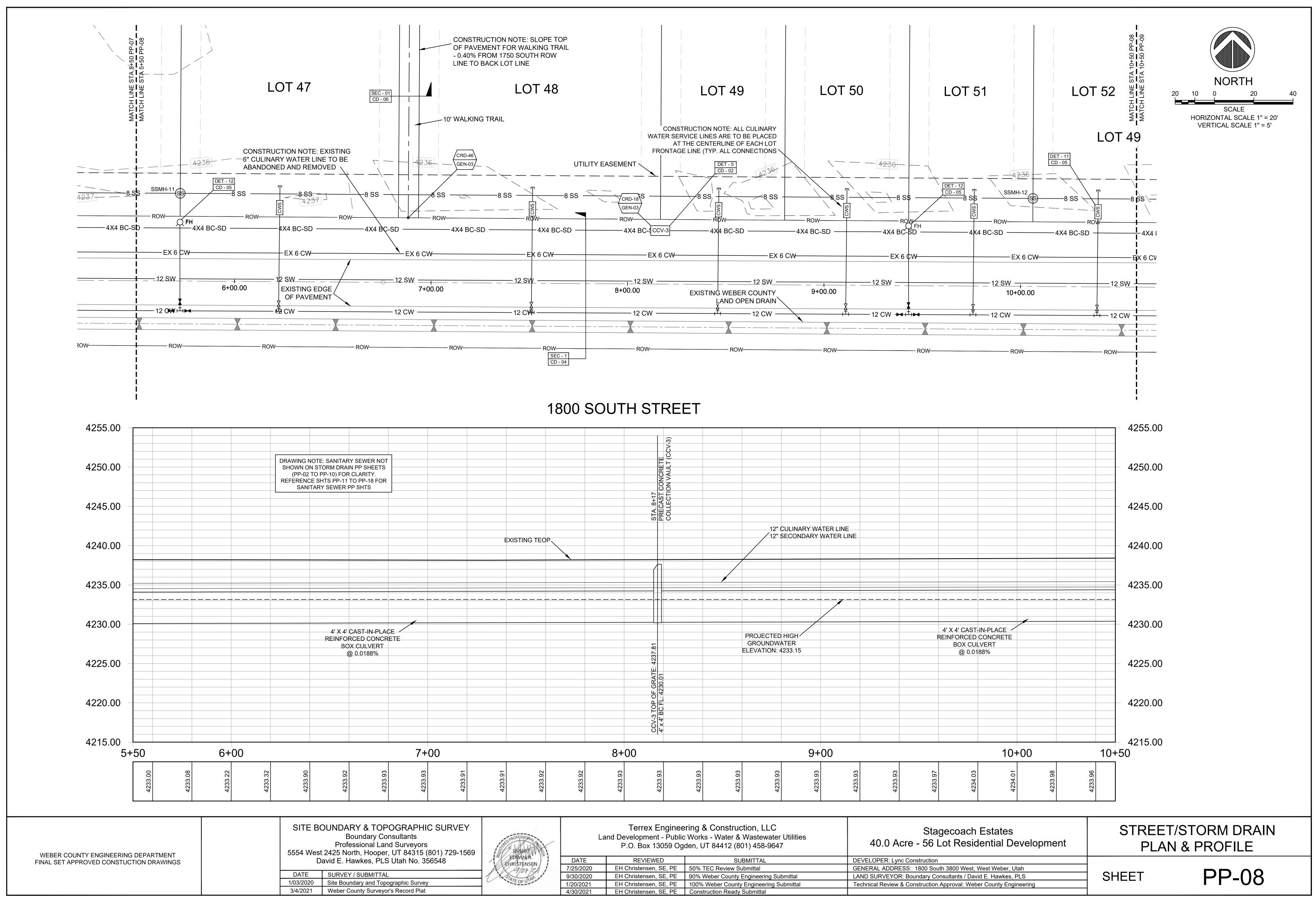




IC SURVEY s (801) 729-1569	Salu PROFESSION AVAILA	L	40.0 Acre -		
356548		DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons
	4/77 CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18
	1 STATISTICS	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Boun
/ey	EOFUI	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

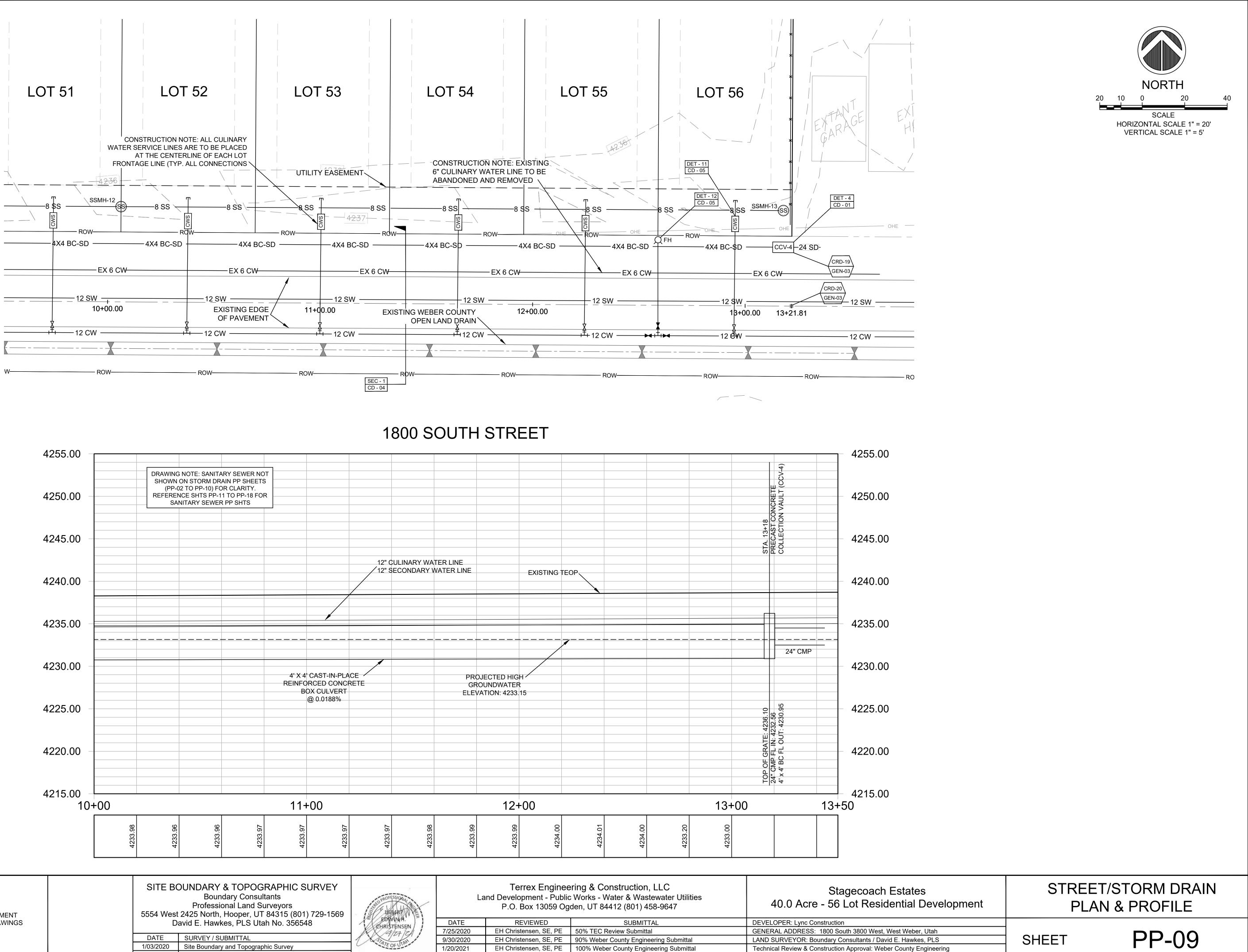


HIC SURVEY rs 5 (801) 729-1569	SED PROFESSION ALS	L	40.0 Acre -		
356548	EDIVINIA.	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons
	4/77 CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 1
	1 Xasta Call	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bour
/ey	EOFUI	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	



					STA. 8+17	COLLECTION VAULT (CCV-3)			CULINARY WA				
					RATE: 4237.81	0 0 0 0 0 0 0 0 0 0 0 0 0		PROJECTED GROUNDW/ ELEVATION: 4	ATER				
					CCV-3 TOP OF GRATE:	4' X 4' BC FL: 423							
<b>′</b> +00				8+	00				9+	-00			
4233.93 4233.91	4233.91	4233.92	4233.92	4233.93	4233.93	4233.93	4233.93	4233.93	4233.93		4233.93	4233.93	
										, 			
HIC SURVEY ors 5 (801) 729-156	100	OPROFESSION AVE	~	Land De F	evelopment	ngineering & - Public Work 059 Ogden, L	ks - Water &	Wastewater	Utilities 7		40.0	) Acr	e -

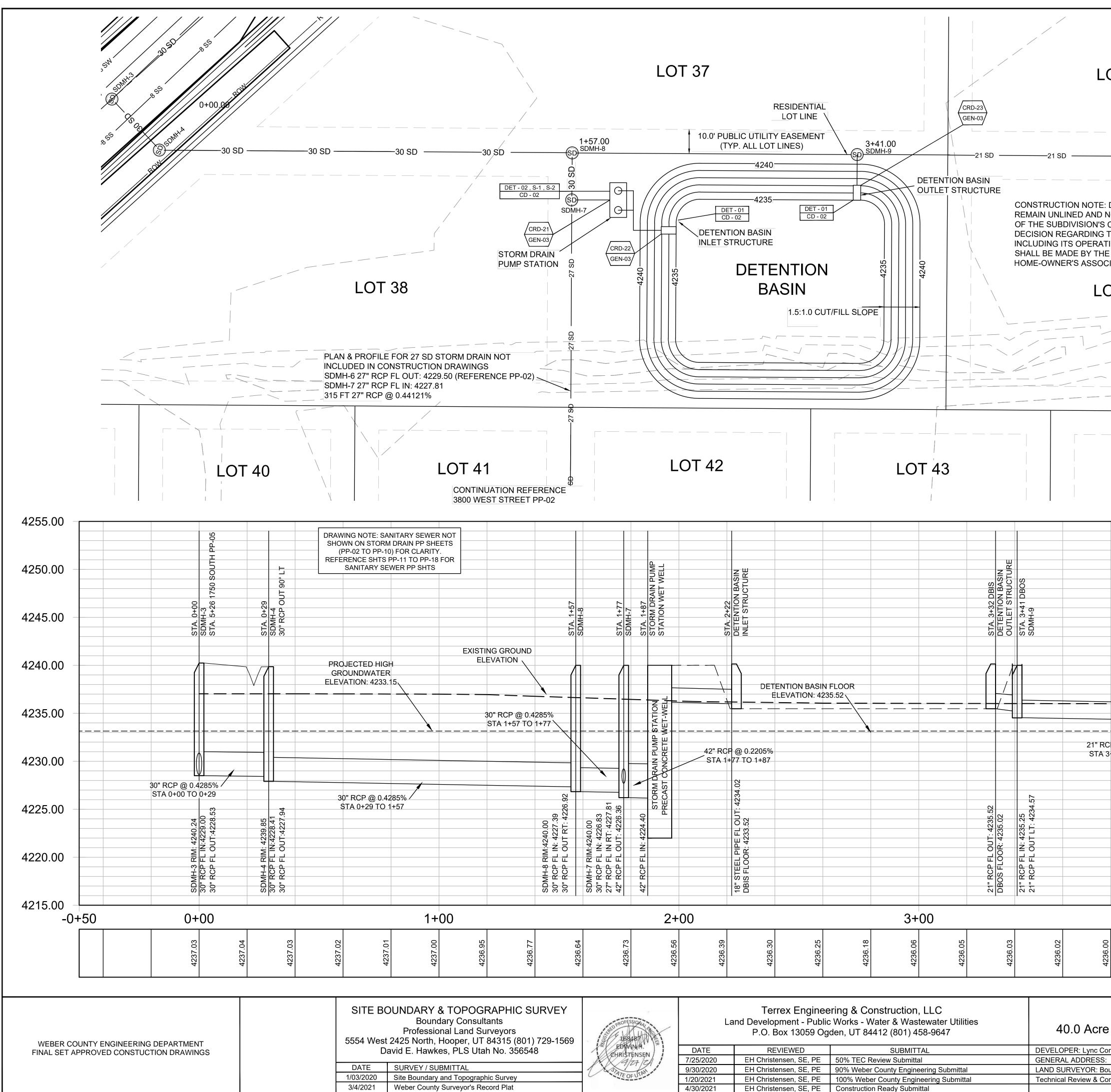
rs 5 (801) 729-1569	188487		40.0 AGE -		
356548	CHRISTENSEN	DATE	DEVELOPER: Lync Const		
	1 × 4/27 24	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18
	A STATE ON !!	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bound
еу	U POFULI	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Const
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	



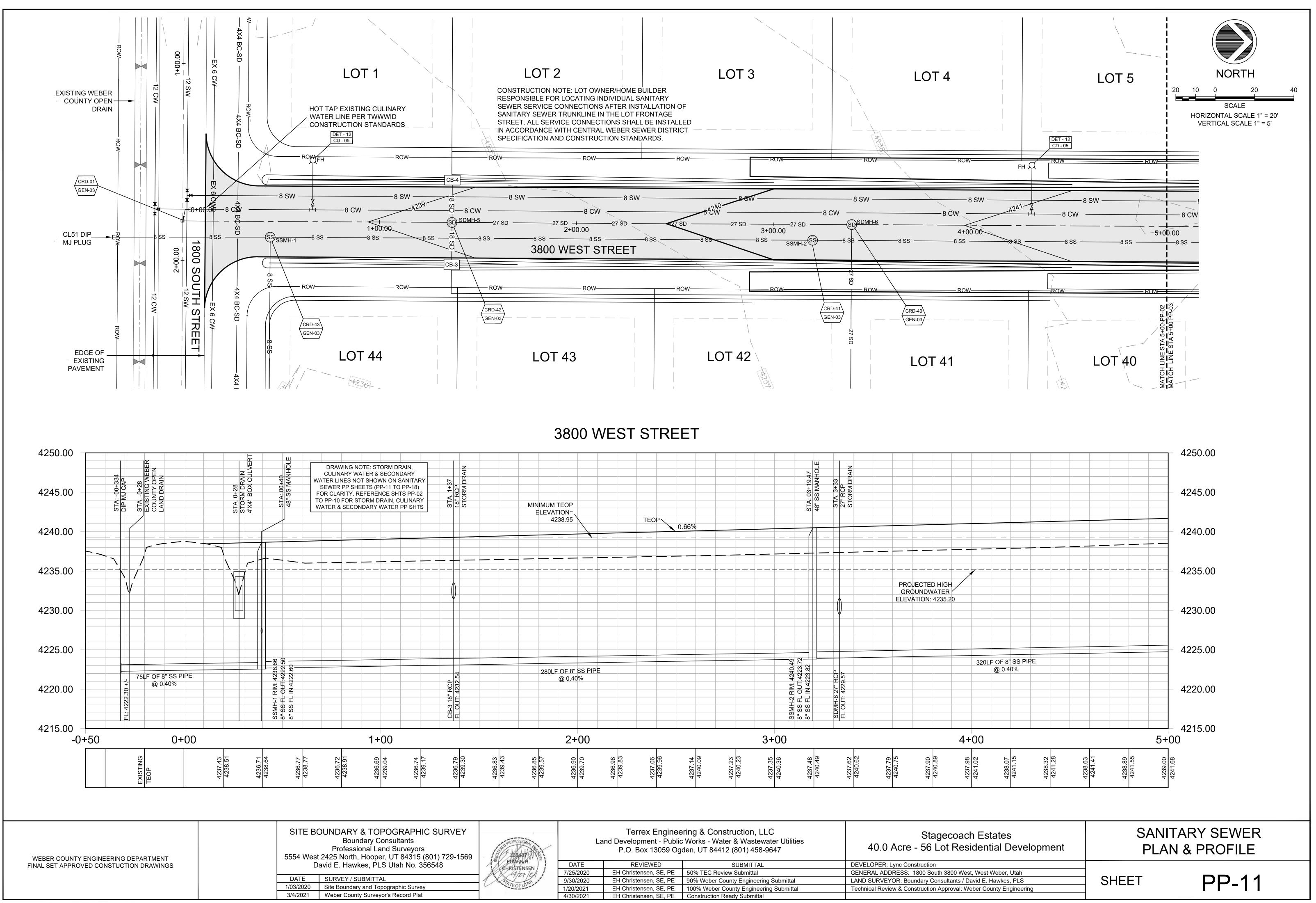
	4255.00 -					
	4250.00 -		SHOWN (PP-0 REFEREN	ON STORM DR 02 TO PP-10) FC	1 TO PP-18 FO	S
	4245.00 -					
	4240.00 -					
	4235.00 -					
	4230.00 -					4' ž REIN
	4225.00 -					
	4220.00 -					
	4215.00 - 10-	+00				1
		4233.98	4233.96	4233.96	4233.97	
			1	1		
RING DEPARTMENT STUCTION DRAWINGS			5554 West	Boun Professi 2425 North,	& TOPOG Idary Consul onal Land St Hooper, UT kes, PLS Uta	tants urveyors 84315 (8

WEBER COUNTY ENGINEERI FINAL SET APPROVED CONST

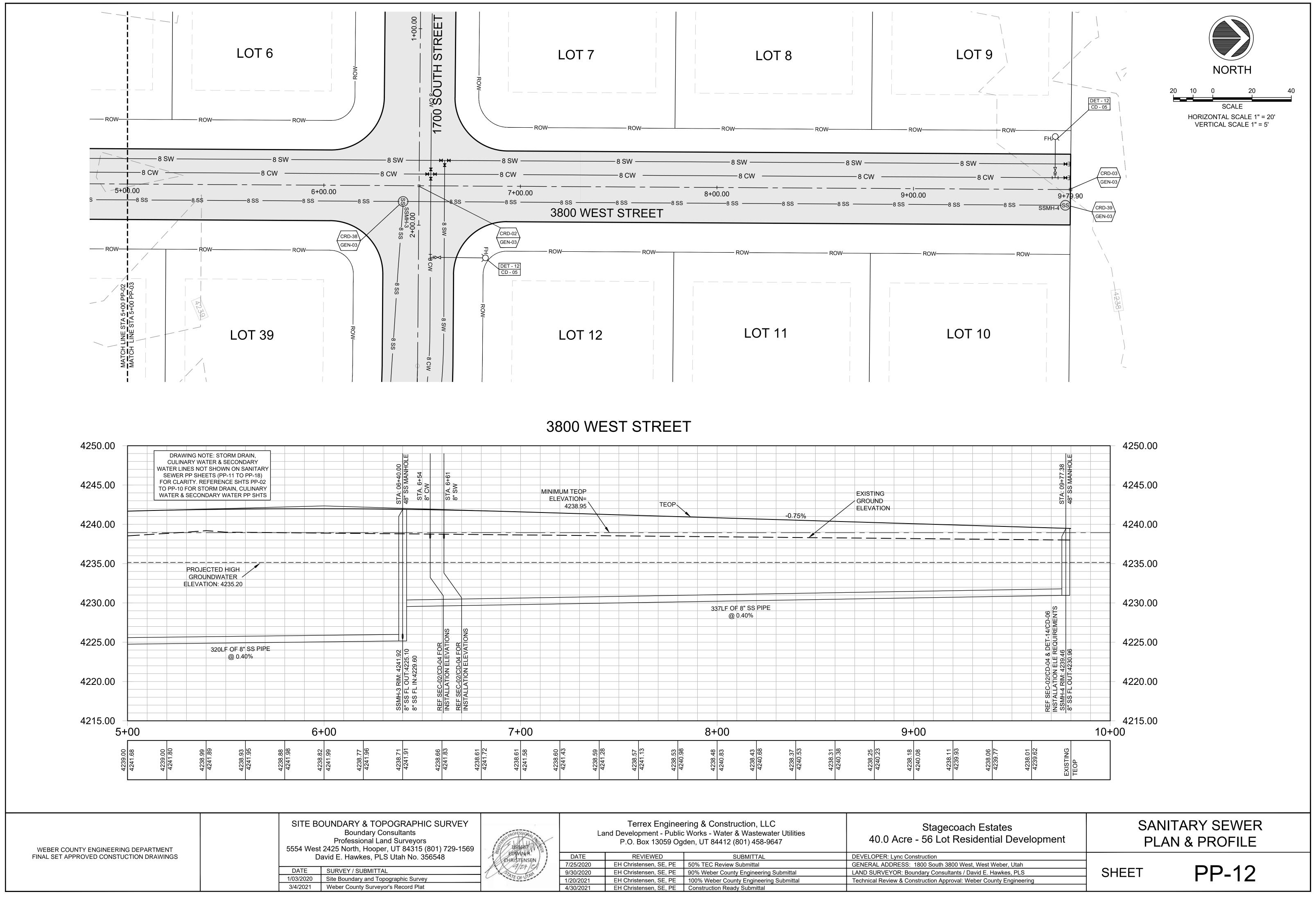
SITE BOUNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 (801) 729-1569		EDWINH.	La	and Development - Public	ering & Construction, LLC c Works - Water & Wastewater Utilities den, UT 84412 (801) 458-9647	Stagecoach Estates 40.0 Acre - 56 Lot Residential Develop				
	David E. Hawkes, PLS Utah No. 356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Construction				
		- 12 4/27/21	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 1800 South 3800 West, West Weber, Utah				
DATE	SURVEY / SUBMITTAL	URVEY / SUBMITTAL		EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Boundary Consultants / David E. Hawkes, PLS				
1/03/2020	1/03/2020 Site Boundary and Topographic Survey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Construction Approval: Weber County Engineering				
3/4/2021	Weber County Surveyor's Record Plat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal					



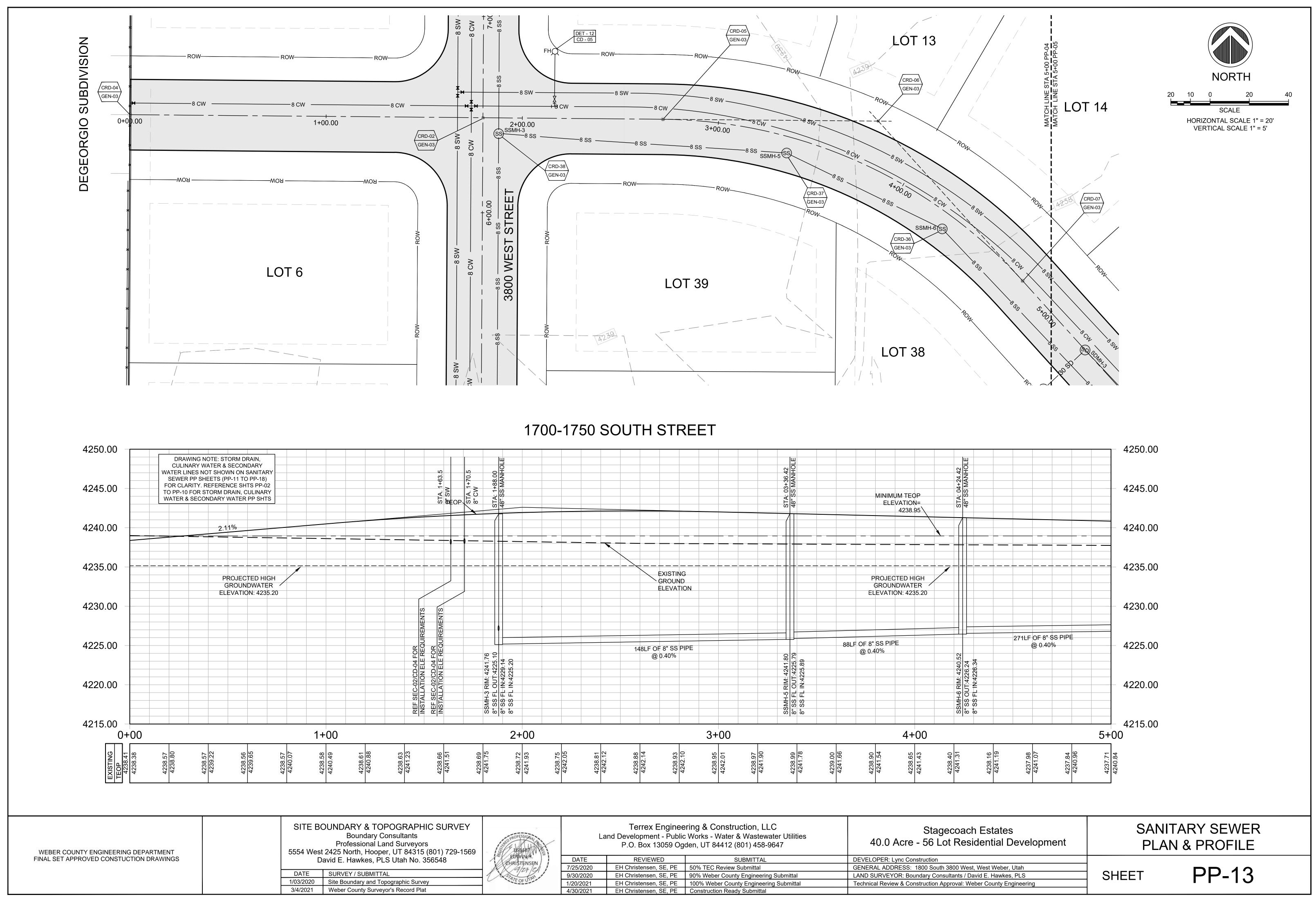
-21 SD -2	4X4 BC-SU       4X4 BC-SU       4X4 BC-SD       0         6       6       6       6         0       EX 6 CW       EX 6 CW       6         0       12 SW       12 SW       5+00.00         1       4+00.00       5+00.00       5+00.00	Image: Construction of the construc
		4255.00
Image: second	STA. 5+02.37 STA. 5+15 1800 SOUTH PRECAST CONCRETE STORM DRAIN COLLECTION VAULT	4250.00
Image: sector		4240.00
		4235.00
P @ 0.3505% / +41 TO 5+28	INLET FL: 4230.16 0UTLET FL: 4230.16 233.91	4230.00
	I: 4238.40 1: 4238.40 4' BOX CULVERT INLET F 4' BOX CULVERT OUTLET RCP INLET FL: 4233.91 RCP INLET FL: 4233.91	4225.00
Image: sector	CCV-2 RIM: 4238.40 CCV-2 4'X4' BOX CL CCV-2 4'X4' BOX CL CCV-2 21" RCP INLE	4220.00
4+00	5+00	4215.00 5+50
4236.00 4235.99 4235.99 4236.00	4236.97 4233.28	
Stagecoach Estates - 56 Lot Residential Development		I BASIN & STORM GE OUTFALL
nstruction 1800 South 3800 West, West Weber, Utah undary Consultants / David E. Hawkes, PLS nstruction Approval: Weber County Engineering	SHEET	PP-10



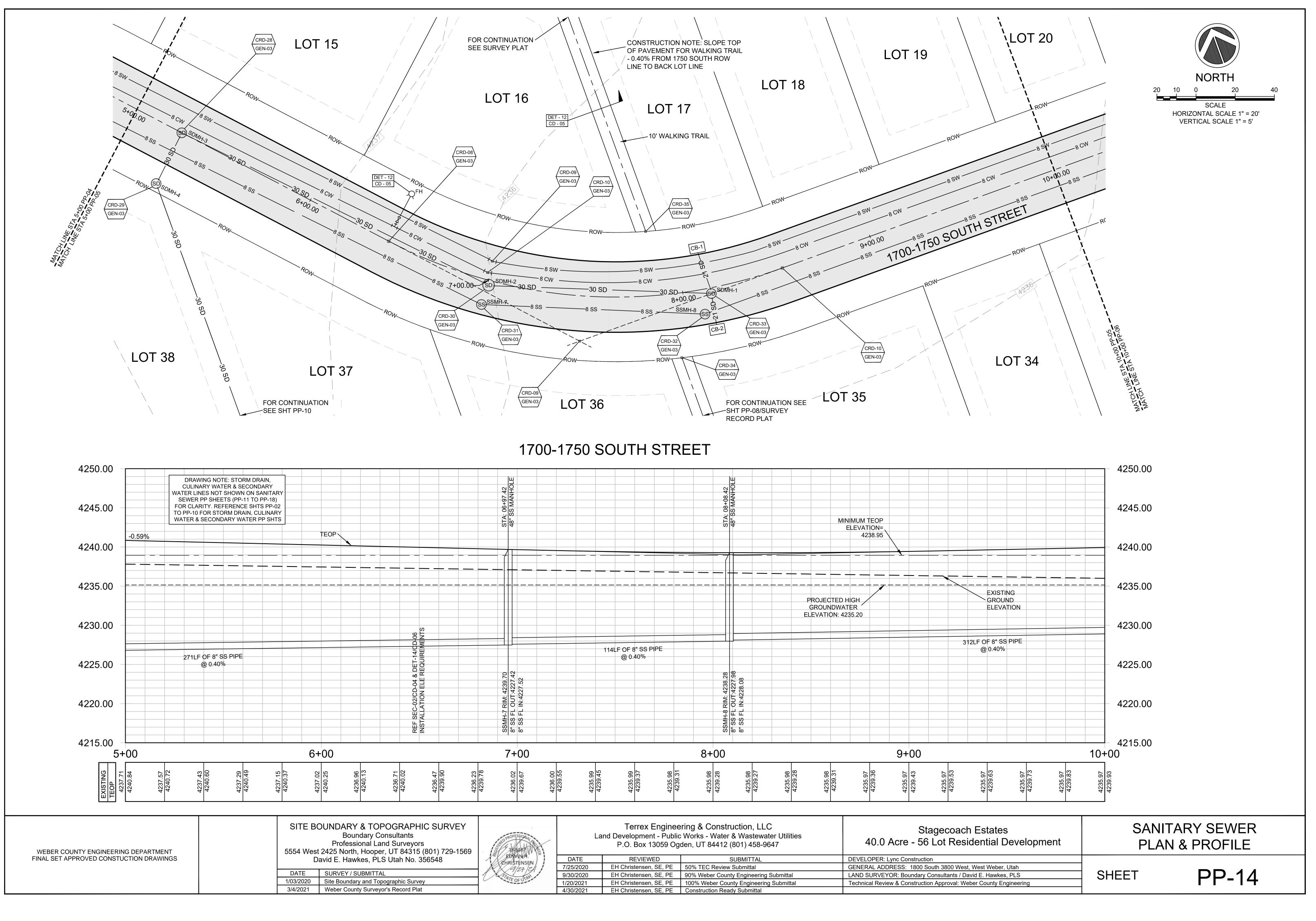
(801) 729-1569	EDWINH		P.O. Box 13059 Ogden, 01 84412 (801) 458-9647					
356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Con			
	1. X 4/77 CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS:			
	1 the STATE ON I	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bou			
еу	EOFU	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Con			
t		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal				



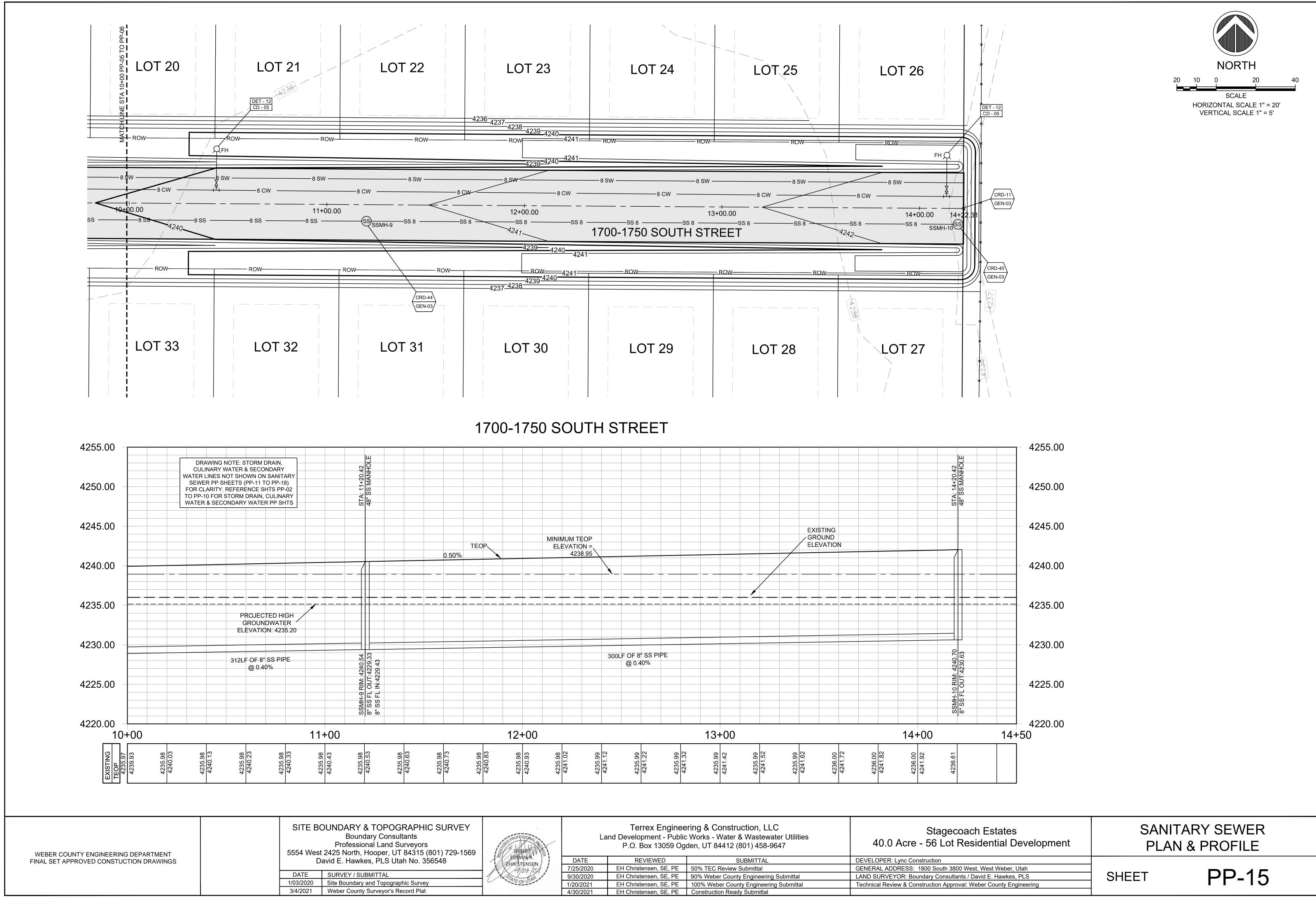
IIC SURVEY (801) 729-1569	L	40.0 Acre -			
356548	POWANIA.	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons
	ATT CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18
	1 STATE ON I	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Boun
/ey	EOFUI	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	



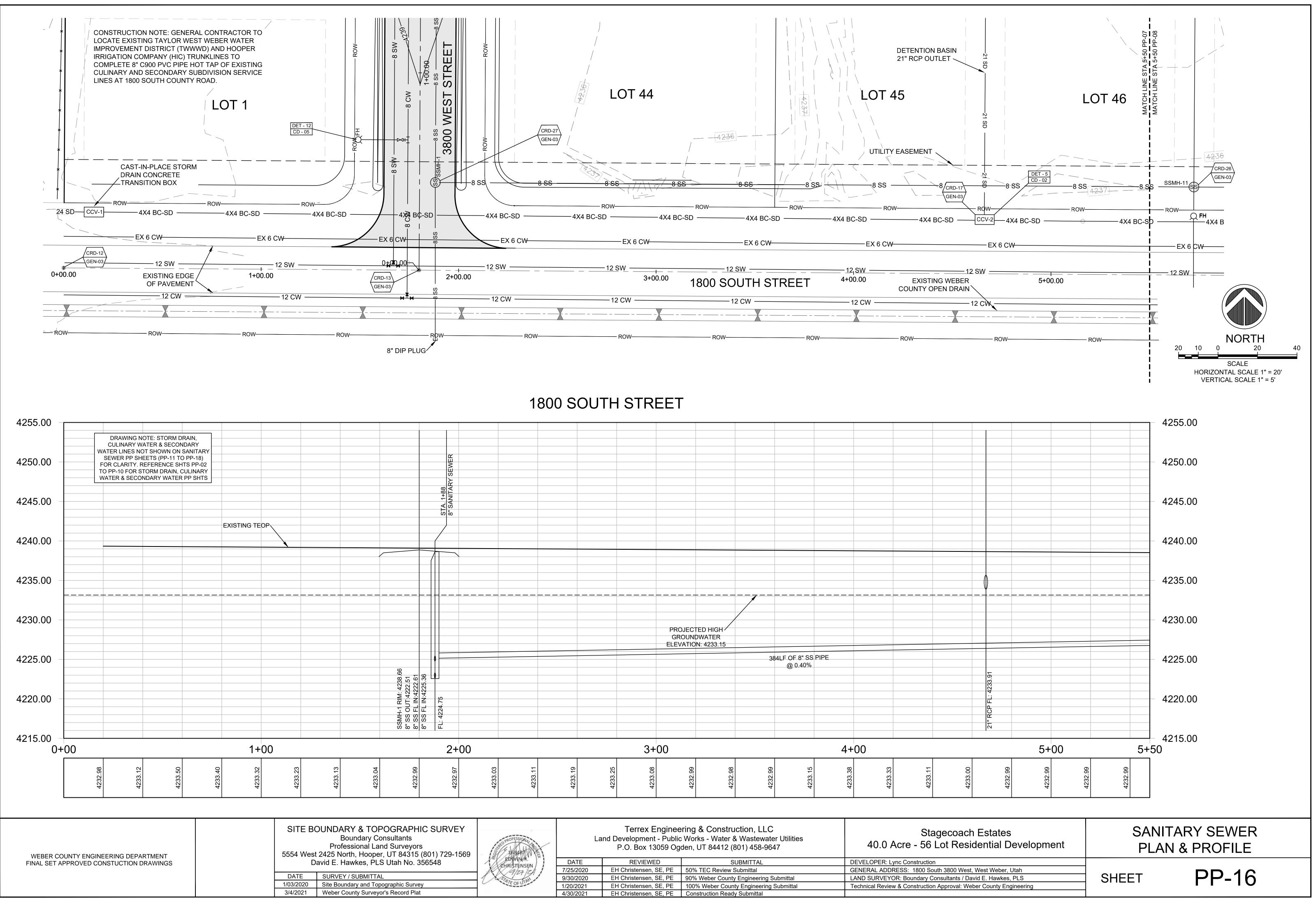
C SURVEY (801) 729-1569	L	40.0 Acre -			
356548		DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Const
	ATT CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18
	1 STATE ON I	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bound
/ey	EOFUI	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Const
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	



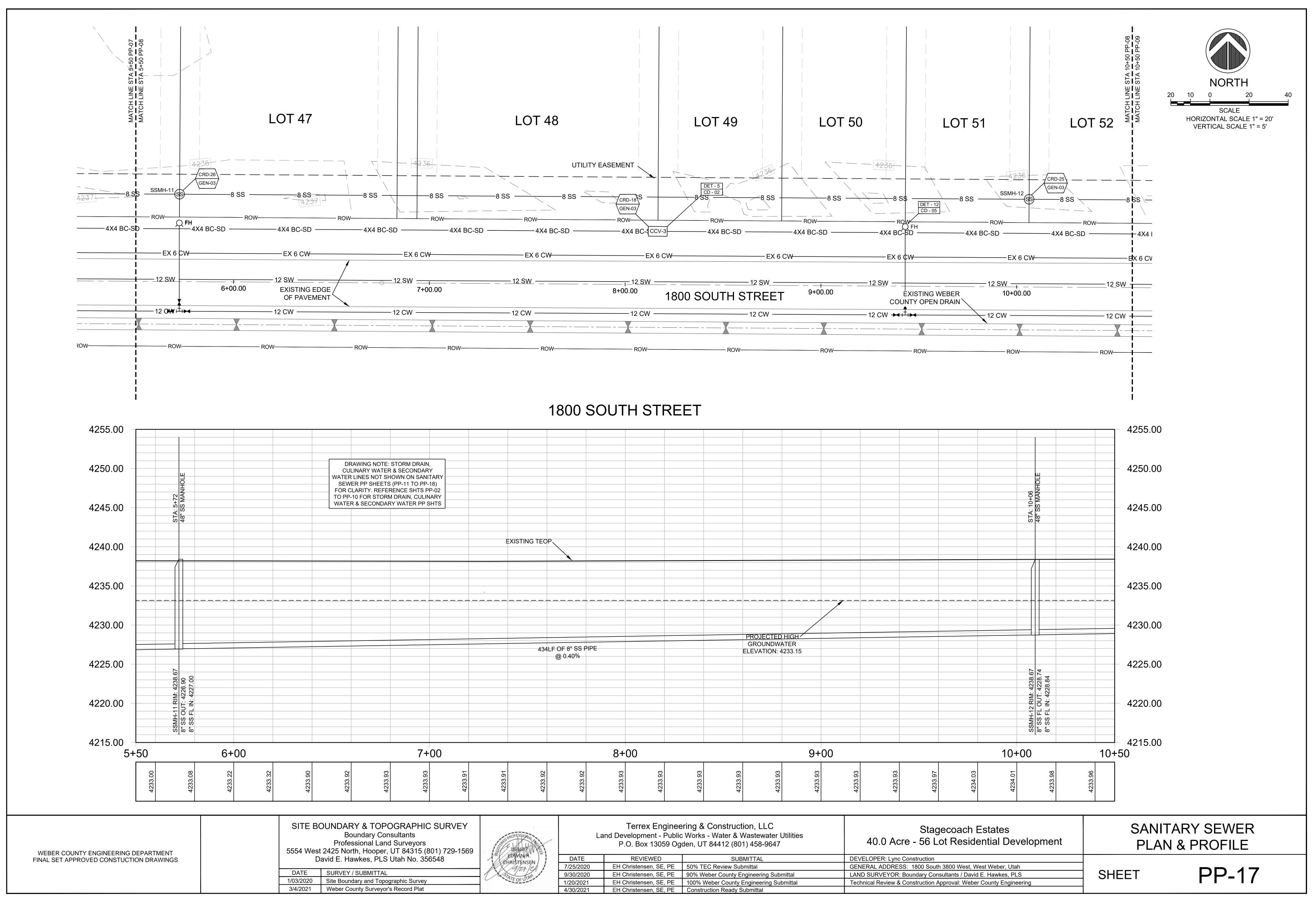
	STA: 06+9 48" SS MA						STA: 08+0 48" SS MA				MINIMI	UM TE VATIO 4238	N=、		
												·			
										GROUN	CTED HIGI NDWATER ON: 4235./				
	SSMH-7 RIM: 4239.70 8" SS FL OUT:4227.42	8 SS FL IN:4227.52		114LF OF 8 @ 0.4	3" SS PIPE 40%		SSMH-8 RIM: 4238.28 8" SS FL OUT:4227.98	8" SS FL IN:4228.08							
	7+(	00				8+	00							9+(	)
4236.47 4239.90 4236.23 4236.23 4239.78	4236.02	4239.67 4236.00	4239.55	4239.45 4235.99	4239.37 4235.98 4235.98	4235.98	4239.28	4235.98 4239.27	4235.98	4239.28	4239.31	4235.97 4239.36		4235.97	4739 43
HIC SURVEY	See PROFES	SIGNAL SECTION		Land Develo	rrex Engine opment - Publi Box 13059 Og	c Works - V	Vater &	Wastewate	er Utiliti	es		40	).0 A	.cre	_
5 (801) 729-1569 356548 vey lat	EDWA CHRISTI STATE OF	INA. ENSEN 27 CA	DATE 7/25/2020 9/30/2020 1/20/2021 4/30/2021	EH Christ EH Christ EH Christ	EVIEWED tensen, SE, PE tensen, SE, PE tensen, SE, PE tensen, SE, PE		Review Su r County er County	Engineering S / Engineering		۱ 	GE LAI	NERAL	PER: Lyi ADDR RVEYO Review	ESS: 1 R: Bou	18 n



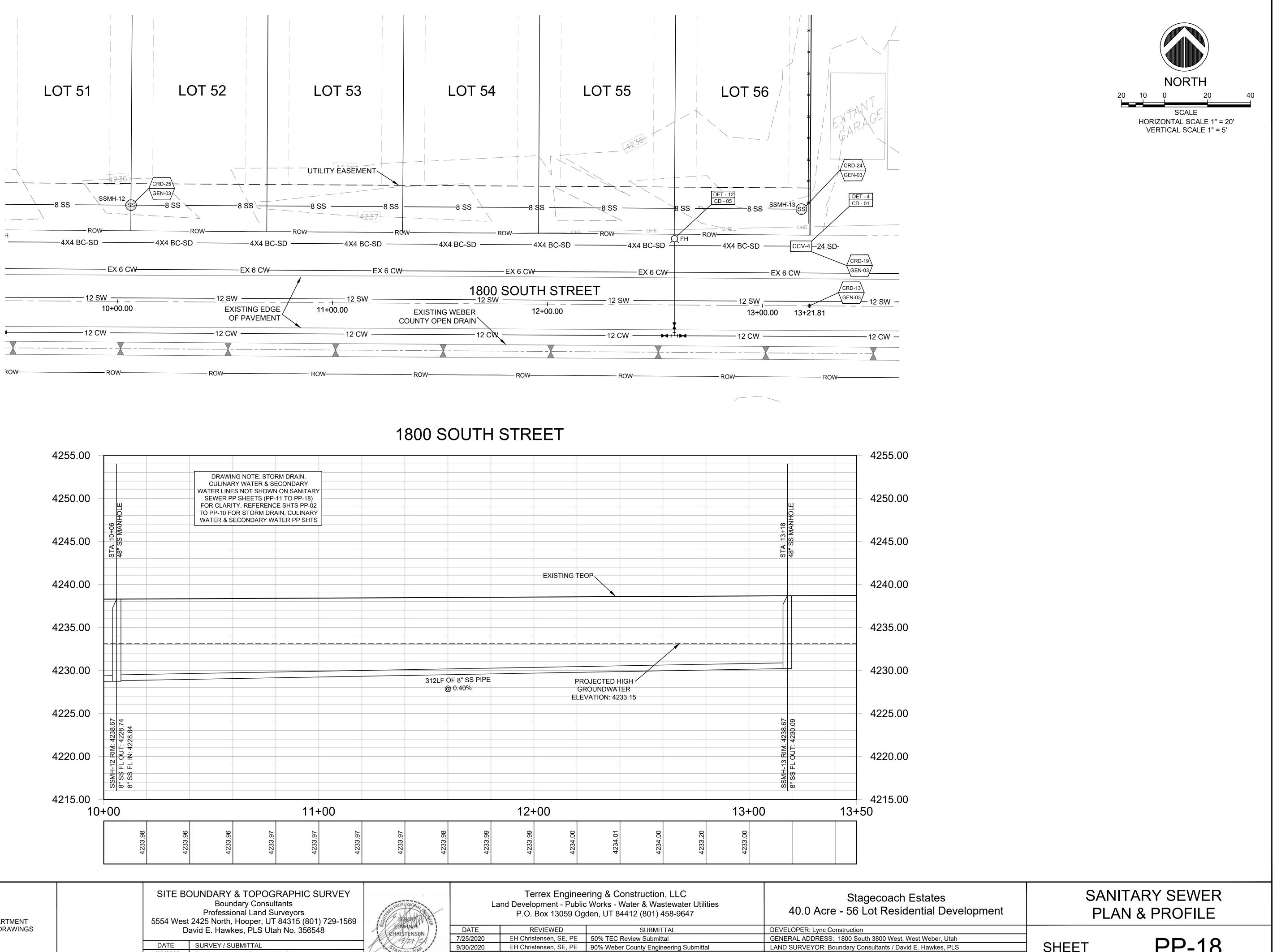
HIC SURVEY ors 5 (801) 729-1569	Stup PROFESSION AL GREAT	L	40.0 Acre -		
356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Const
	A A 777	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 18
	A STATISTICS	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bound
vey	EOFUIT	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

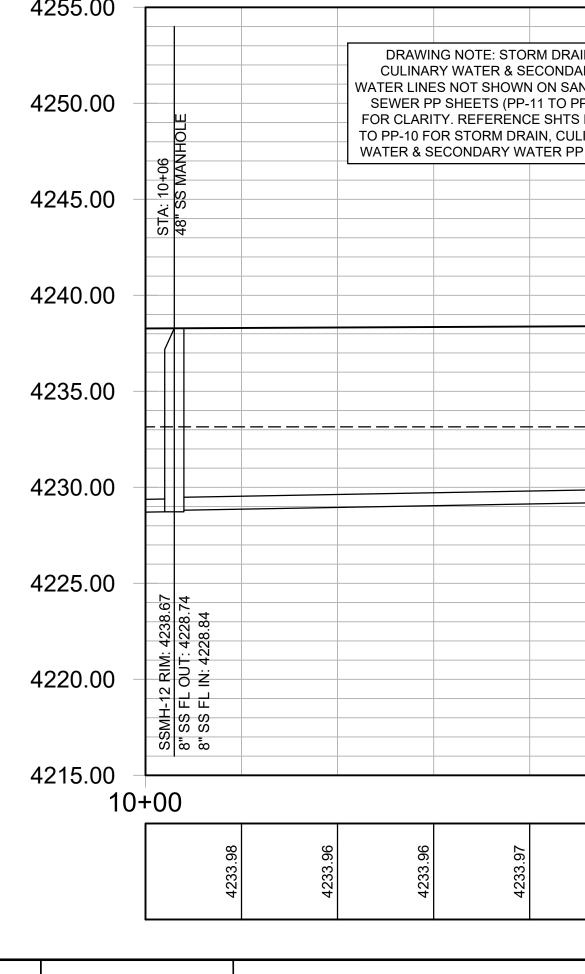


HIC SURVEY ors 5 (801) 729-1569	State PROFESSIONAL ST	La	40.0 Acre -		
356548		DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons
	4/77 CA	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 1
	1 STATE ON I	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bour
vey	EOFU	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
lat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	



548	PUPICTENICENI	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Con
	1 A 177 74	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS:
	1 STATE ON I	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bou
	EOFUI	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Con
		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	





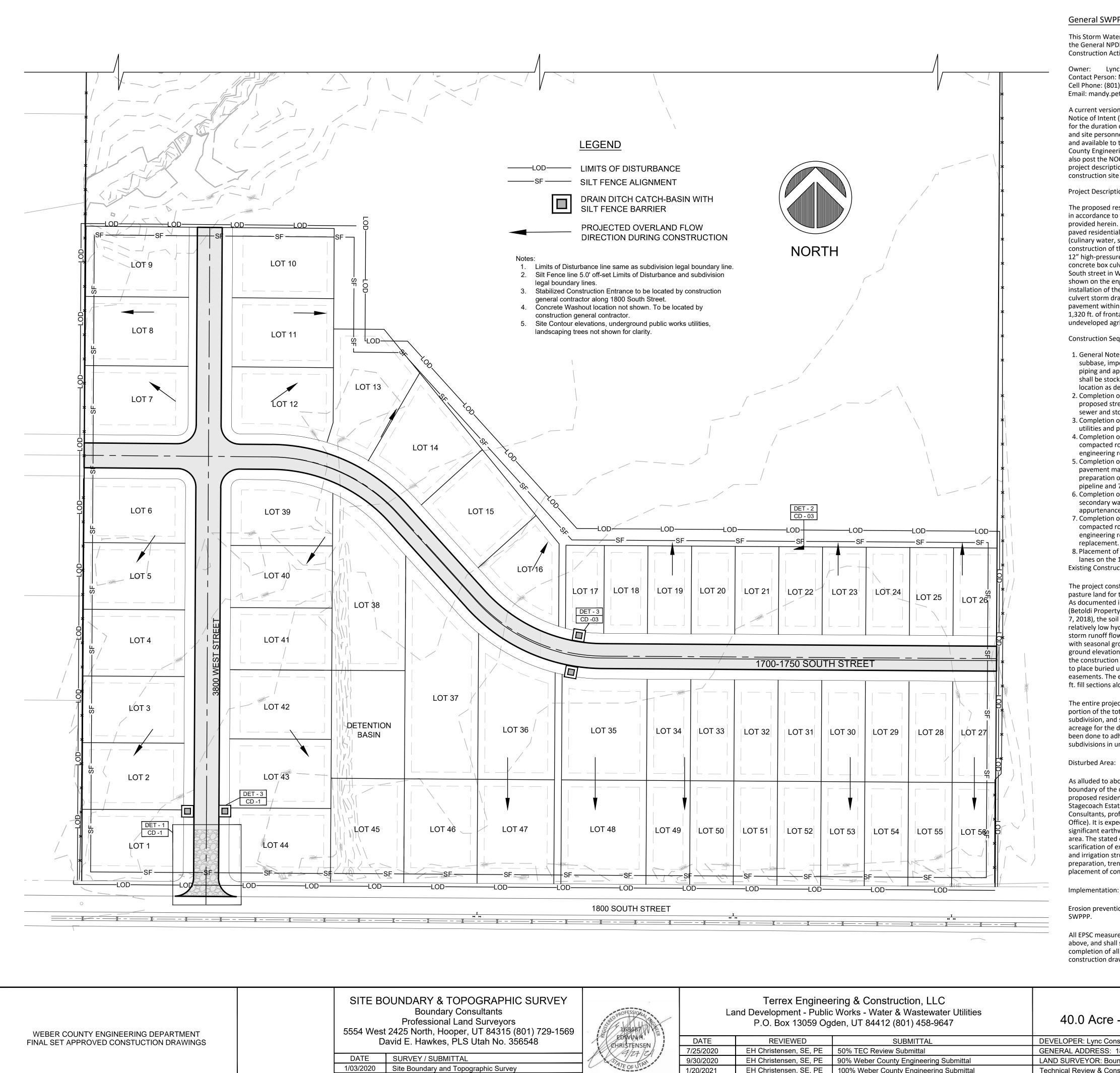
WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS	Bo Profe 5554 West 2425 No	RY & TOPOGRAPHIC oundary Consultants ssional Land Surveyors rth, Hooper, UT 84315 (80 awkes, PLS Utah No. 356
	DATE SURVEY	/ SUBMITTAL
	1/03/2020 Site Boun	dary and Topographic Survey
	3/4/2021 Weber Co	ounty Surveyor's Record Plat

													_
AIN, ARY													_
ANITARY PP-18)													
S PP-02													
ILINARY PP SHTS											STA: 13+18		
											3+18		
											TA:	か 、 、 、 、 、 、 、 、 、 、 、 、 、	
											ی ا	4	
						EXISTING 1	EOP						
											/		
													-
			312LF (	DF 8" SS PIPE		P	ROJECTED H	IIGH					
			(	0.40%			GROUNDWAT _EVATION: 42						
											67	60	
											.238.	230.	
											3 RIM: 4238.67	4.	
											13 R	д Т	
											SSMH-13 I	н So	
											SS	<b>0</b>	
11+	.00				12+	-00				13+(	00		
26	76	26	8	6	66	8	5	g	0	g			
4233.97	4233.97	4233.97	4233.98	4233.99	4233.99	4234.00	4234.01	4234.00	4233.20	4233.00			
4	4	4	4,	4	4	4	4	4,	4	4			
HIC SI	URVEY				Te	rrex Engine	eerina & C	onstruction	. LLC				
		D PROFE	SSIONALO		Land Develo	pment - Pub	lic Works - \	Water & Was	tewater Utilit	ties		100 0	~
ors		EGAN	1 HANGY		P.O.	Box 13059 C	Ogden, UT 8-	4412 (801) 4	58-9647		· · · ·	40.0 Acr	e -

5 (801) 729-1569	168487				
356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons
	1. X /4/27 /24	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 1
	A STATE TONT	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Boun
/ey	EOFU	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
at		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

oundary Consultants / David E. Hawkes, PLS nstruction Approval: Weber County Engineering SHEET

**PP-18** 



3/4/2021

JNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors 425 North, Hooper, UT 84315 (801) 729-1569	EDWINH. CHRISTENSEN	La	40.0 Acre		
vid E. Hawkes, PLS Utah No. 356548		DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Co
		7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS:
SURVEY / SUBMITTAL	A STATE AND	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bo
Site Boundary and Topographic Survey	TEOFUL	1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Co
Weber County Surveyor's Record Plat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	

# General SWPPP Information, Regulations and Notes

Owner: Lync Construction Contact Person: Mandy Peterson Cell Phone: (801) 603-7853 Email: mandy.peterson27@gmail.com

A current version of this Storm Water Pollution Prevention Plan (SWPPP), the Notice of Intent (NOI), and the Notice of Coverage (NOC) will be kept on site for the duration of the project. These items will be available for all operators and site personnel involved with erosion prevention and sediment controls, and available to the Utah Department of Environmental Quality and Weber County Engineering Department personnel visiting the site. The permittee will also post the NOC, owner and General Contractor contact information, and project description on the project SWPPP signage as posted on the construction site where construction is underway.

Project Description:

The proposed residential subdivision (Stagecoach Estates) will be constructed in accordance to the engineering construction drawings and specifications as provided herein. The project will include the construction of 2,400 ft. of new paved residential streets including all underground public works utilities (culinary water, secondary water, sanitary sewer and storm drain). The construction of the subdivision will also require the placement 1,320 ft. of a 12" high-pressure secondary water trunk-line and 1,320 ft. of a 72" by 36" concrete box culvert storm drain both within the utility right-of-way for 1800 South street in West Weber. Utah from roughly 3700 West to 3900 West as shown on the engineering construction drawings provided herein. Said installation of the high-pressure secondary water trunk-line and concrete box culvert storm drain will require the demolition and replacement of existing pavement within the North half of 1800 South over the above-referenced 1,320 ft. of frontage. The subdivision will encompass 21.6 acres of undeveloped agricultural livestock pasture land.

- appurtenances.
- replacement.
- Existing Construction Site Conditions:

The project construction site is currently used as non-irrigated agricultural pasture land for the keeping of domestic livestock including cattle and horses. As documented in the geotechnical report prepared by CMT Engineering (Betoldi Property, 1800 South about 3900 West, CMT Project No. 10878, March 7, 2018), the soil surface is primarily consisting of clayey sandy topsoil with relatively low hydraulic permeability rates that's susceptible to significant storm runoff flows. Additionally, the site has a high groundwater condition with seasonal groundwater elevations fluctuating to within 1.0 ft. of existing ground elevations. The project General Contractor will be required to dewater the construction site in order to drawdown groundwater elevations sufficient to place buried utility piping within proposed subdivision street utility easements. The existing groundwater condition will also require 2.0 ft. to 4.0 ft. fill sections along certain segments of proposed subdivision streets.

The entire project site, or property, is 40.0 acres in total area. However, the portion of the total acreage that is considered developable into a residential subdivision, and subject to SWPPP regulations, is 21.62 acres. The reduction in acreage for the developable portion of the overall site or property acreage, has been done to adhere to Weber County zoning ordinances for cluster subdivisions in unincorporated Weber County.

Disturbed Area:

As alluded to above, the disturbed area is approximately 21.62 acres. The boundary of the disturbed area is contiguous with the legal boundary of the proposed residential subdivision (reference the Surveyor's Record Survey for Stagecoach Estates residential subdivision as submitted by Boundary Consultants, professional land surveyors, to the Weber County Surveyor's Office). It is expected that the project General Contractor will engage in significant earthwork and dewatering activities over a majority of the disturbed area. The stated earthwork shall include, but not necessarily limited to, site scarification of existing vegetation, demolition of existing farm out-buildings and irrigation structures, rough grading for proposed street subgrade preparation, trenching and backfill operations to place buried utility piping, placement of compacted road base, etc.

All EPSC measures shall be installed prior to earthwork operations, as described above, and shall stay in place until disturbed areas are stabilized after the completion of all civil-site construction as shown on the attached project construction drawings.

This Storm Water Pollution Prevention Plan is developed in accordance with the General NPDES Permit for Storm Water Discharges Associated with Construction Activity (TNCGP).

Construction Sequencing and General Construction Notes:

1. General Note: All construction materials including excavated earth, road subbase, imported trench backfill, pipe bedding, crushed aggregate, utility piping and appurtenances, demolition debris and materials, and the like shall be stockpiled or stored within the construction site at an unspecified location as determined by the project General Contractor.

2. Completion of general site rough grading to establish alignments of proposed streets in addition to culinary water, secondary water, sanitary sewer and storm drainage buried utility pipelines.

Completion of all trench and backfill work to place all underground piped utilities and piping appurtenances.

4. Completion of all rough grading to establish subgrades for the placement of compacted road-base materials as required by the geotechnical engineering report and specifications.

5. Completion of demolition and removal of existing asphalt and concrete pavement materials at the North half of 1800 South county road in preparation of the placement of the 12" high-pressure secondary water

pipeline and 72" by 36" box culvert storm drain. 6. Completion of all trench and backfill work to place the above-referenced

secondary water-line and box culvert storm drain piping and 7. Completion of all rough grading to establish subgrades for the placement of

compacted road-base materials as required by the geotechnical engineering report and specifications for the 1800 South county road

8. Placement of asphaltic pavement materials to re-establish paved traffic lanes on the 1800 South county road.

onstruction

Erosion prevention and sediment control (EPSC) features are as shown this

# Stagecoach Estates re - 56 Lot Residential Development

: 1800 South 3800 West, West Weber, Utah Boundary Consultants / David E. Hawkes, PLS Construction Approval: Weber County Engineering Straw bales will not be accepted as a replacement for silt fencing. No discharge from the project construction site shall cause an objectionable color contrast within local receiving stream. All silt fencing shall be installed and maintained as required to prevent sediment from this project being deposited on adjacent property or into adjacent drainage paths.

Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than 14 calendar days prior to excavation or earth moving activities unless the area is seeded and/or mulched or other temporary cover is installed. EPSC measures must be in place and functional before earth moving operations begin, and must be constructed and maintained throughout the construction period. EPSC measures are designed to minimize erosion and maximize sediment removal from a 5-year, 24-hour storm, as a minimum. Temporary measures to remove any EPSC measures, or facility, including sediment fencing, storm inlet sediment fencing or protections, concrete washout basins, construction entrance improvements, etc. is allowed with 24-hour notice and approval from Weber County Engineering Department. All removed EPSC measures, or facilities, shall be replaced, or re-established at the end of the workday.

Stabilization measures shall be initiated as soon as possible in project areas where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site must be completed no later than 15 days after the construction activity, in that portion of the overall construction site, has temporarily or permanently ceased. The runoff coefficient will be the same after construction as preconstruction.

Sediment laden water pumped from excavations and work areas must be discharged to a temporary sedimentation basin before being released by a means that does not cause erosion or siltation of adjacent waters. If sediment filter bags are used, they should be properly disposed after reaching capacity.

### Inspection and Maintenance:

The General Contractor shall be responsible for the removal of accumulated silts and sediments from the erosion and sediment control devices. The General Contractor shall be responsible for all repair and maintenance of all EPSC measures or facilities. General Contractor shall inspect outfalls and sediment control twice a week at least 72 hours apart, using the approved inspection form as provided by Weber County Engineering Department. The General Contractor shall also inspect before and after rainfall events. During extended rainfall events, sediment traps may be inspected daily during construction if required. The General Contractor shall remove accumulated silt at or before it reaches 50% design capacity, including but not limited to silt fence and rock or straw bale check dams. All silts and/or sediments removed from the erosion/sediment control devices shall be deposited onsite in such a manner as to prevent them from re-entering the control devices or exiting the site through the storm drainage systems or surface drainage. Off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts.

Twice weekly inspections must be performed by an individual having active certification with the "Fundamentals of Erosion Prevention and Sediment Control Level I" course. A copy of the certification or training record for the inspector certification shall be kept on file by the Owner's contact person as given above.

Special Assurance Site Assessment shall be performed at outfalls that have drainage areas greater than 5 acres. This assessment must be performed by a Professional Engineer, Certified Professional in Erosion and Sediment Control, or an individual that has completed the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course. This outfall check must be completed within one month of the commencement of construction

# General:

There are no known discharges from industrial activity associated with this project site. The General Contractor is responsible for controlling and reducing pollutants from materials stored on site. All fueling of equipment and vehicles on site will be conducted near the construction staging area. Any spillage will be removed immediately. Contaminated soils will be placed on heavy plastic and covered or placed into approved containers to prevent contact with storm water. All fuel tanks will be in the containment area. Any spill in excess of 2 gallons will be reported.

If a release containing a hazardous substance in an amount equal to or in excess of a reporting quantity established under either 40 CFR 117 or 40 CFR 302 occurs within a 24 hour period, the General Contractor shall immediately notify the permittee who shall then do the following: notify the National Response Center (NRC) at 1-800-424-8802 and the Weber County Sheriff's Department at 801-629-8221 as well as the Utah Department of Environmental Quality at 801-536-4123.

### Signage:

The project General Contractor shall post a 4' by 8' SWPPP compliance sign at a conspicuous location within the subdivision construction site that can be readily read form the 1800 South project frontage county road. The sign shall have a white background with prominent SWPPP red lettering across the top. Other lettering shall be red but smaller in size and formatted to fill the sign area to the extent possible. The sign shall give public notice of the following:

- Stormwater Pollution Prevention Plan can be Inspected at the Office of Lync Construction at (Address to be Provided by Lync Construction)
- •Lync Construction Authorization Number: (to be Provided by Lync
- •Operator: Lync Construction

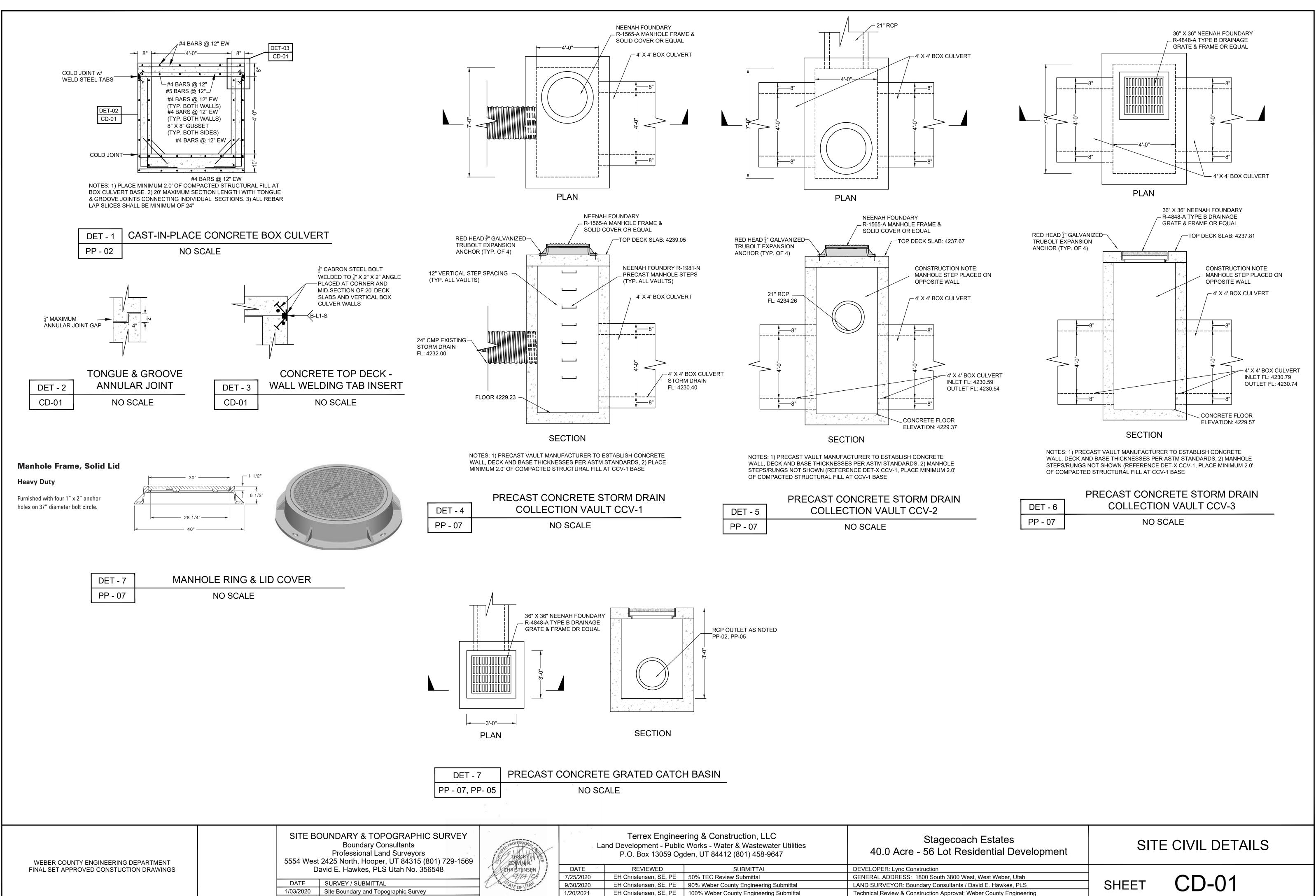
Construction)

- •Contact: Mandy Peterson at (801) 603-7853
- Construction Site Encompasses 21.6 acres
- •General Construction Site Address: 1800 South 3800 West, West Weber Utah, 84401

•Unauthorized Trespassing within the Construction Site Shall be Subject to

# **STORM WATER POLLUTION** PREVENTION PLAN

**SWP-01** 

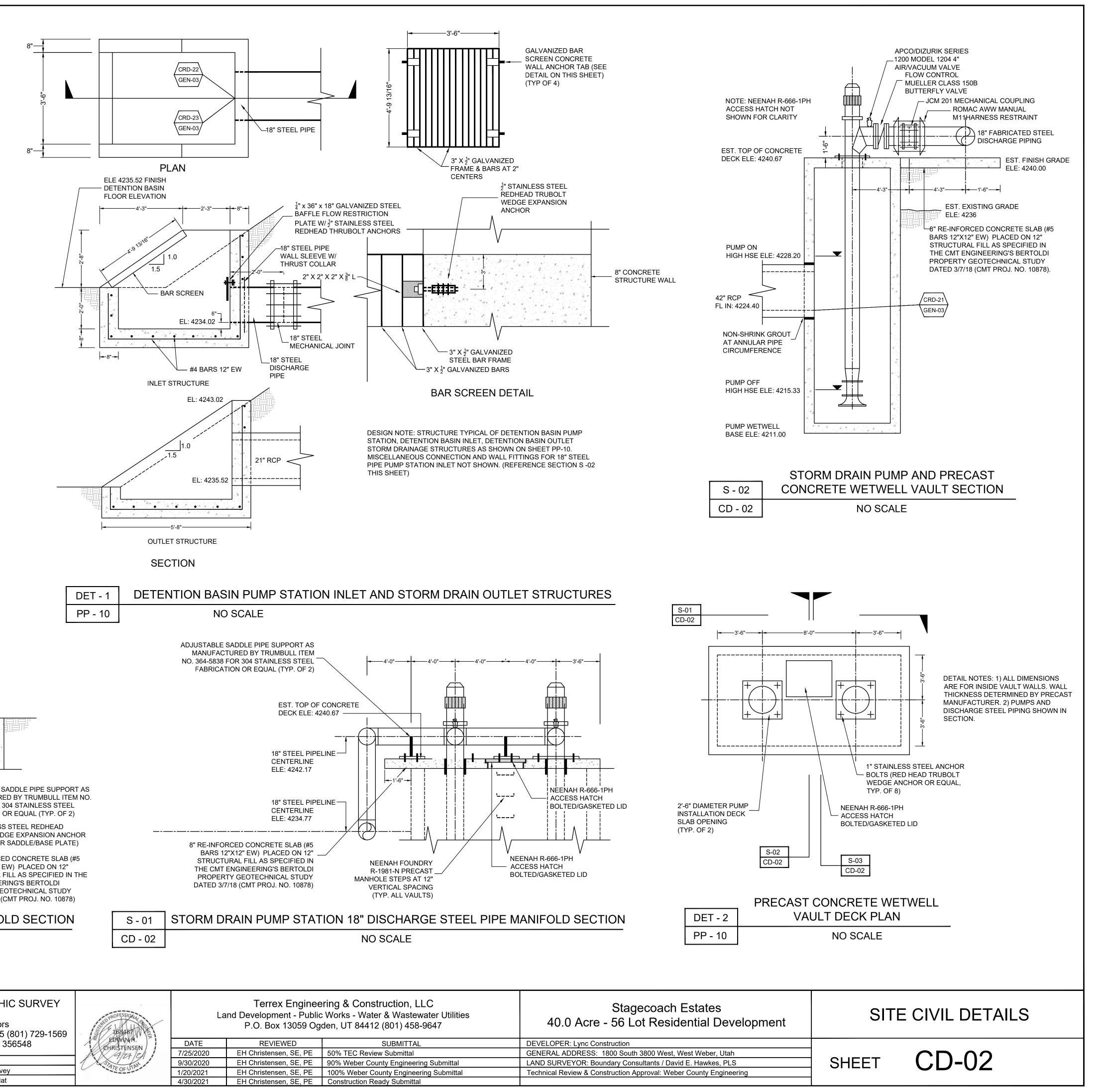


SITE BOUNDARY & TOPOGRAPHIC SURVEY Boundary Consultants Professional Land Surveyors 5554 West 2425 North, Hooper, UT 84315 (801) 729-1569		AND PROFESSION AL OR	La	40.0 Acre -		
David E. Hawkes, PLS Utah No. 356548		CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Constr
		1× × 4/27/21	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 180
DATE	SURVEY / SUBMITTAL	STATE OF UTAN	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bound
1/03/2020	Site Boundary and Topographic Survey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Constr
3/4/2021	Weber County Surveyor's Record Plat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	
			3	-		-

Stagecoach Estates
<ul> <li>- 56 Lot Residential Developmer</li> </ul>

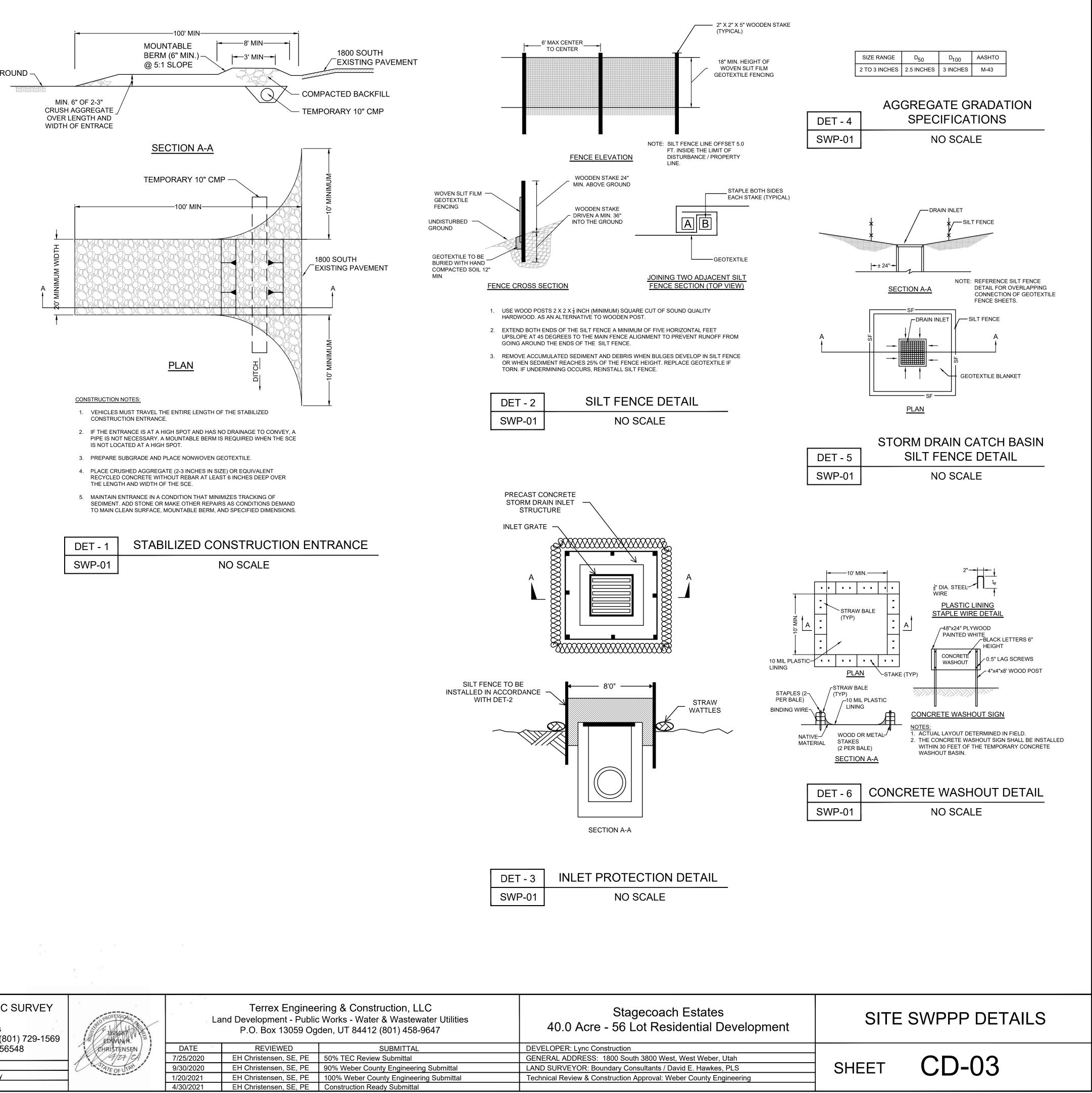
300 South 3800 West, West Weber, Utah
dary Consultants / David E. Hawkes, PLS
truction Approval: Weber County Engineering

1200 AIR/ MUE B JCM 201 MECH. ROMA	DIZURIK SERIES D MODEL 1204 4" VACUUM VALVE – FLOW CONTROL SUTTERFLY VALVE ANICAL COUPLING C AWW MANUAL ESS RESTRAINT	3	•
DETENTION BASIN FLOOR ELE: 4235.00 ELE: 4235.00	34.25		ADJUSTABLE S ADJUSTABLE S ADJUSTABLE S MANUFACTURE 364-5838 FOR 3 FABRICATION C 3/4" STAINLESS TRUBOLT WEDD (TYP. OF 4 PER 8" RE-INFORCE BARS 12"X12" E STRUCTURAL F CMT ENGINEER PROPERTY GEO DATED 3/7/18 (C
S - 03 STORM DRAIN PUMP STATION 18" DIS CD - 02 NO S	SCHARGE SCALE	STEEL PIPE	
WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS	5554 West 2 Dav DATE	UNDARY & TO Boundary Professional L 2425 North, Hoop vid E. Hawkes, P SURVEY / SUBMIT Site Boundary and T	Consultants and Surveyor per, UT 84315 PLS Utah No. 3 TAL
		Weber County Surve	

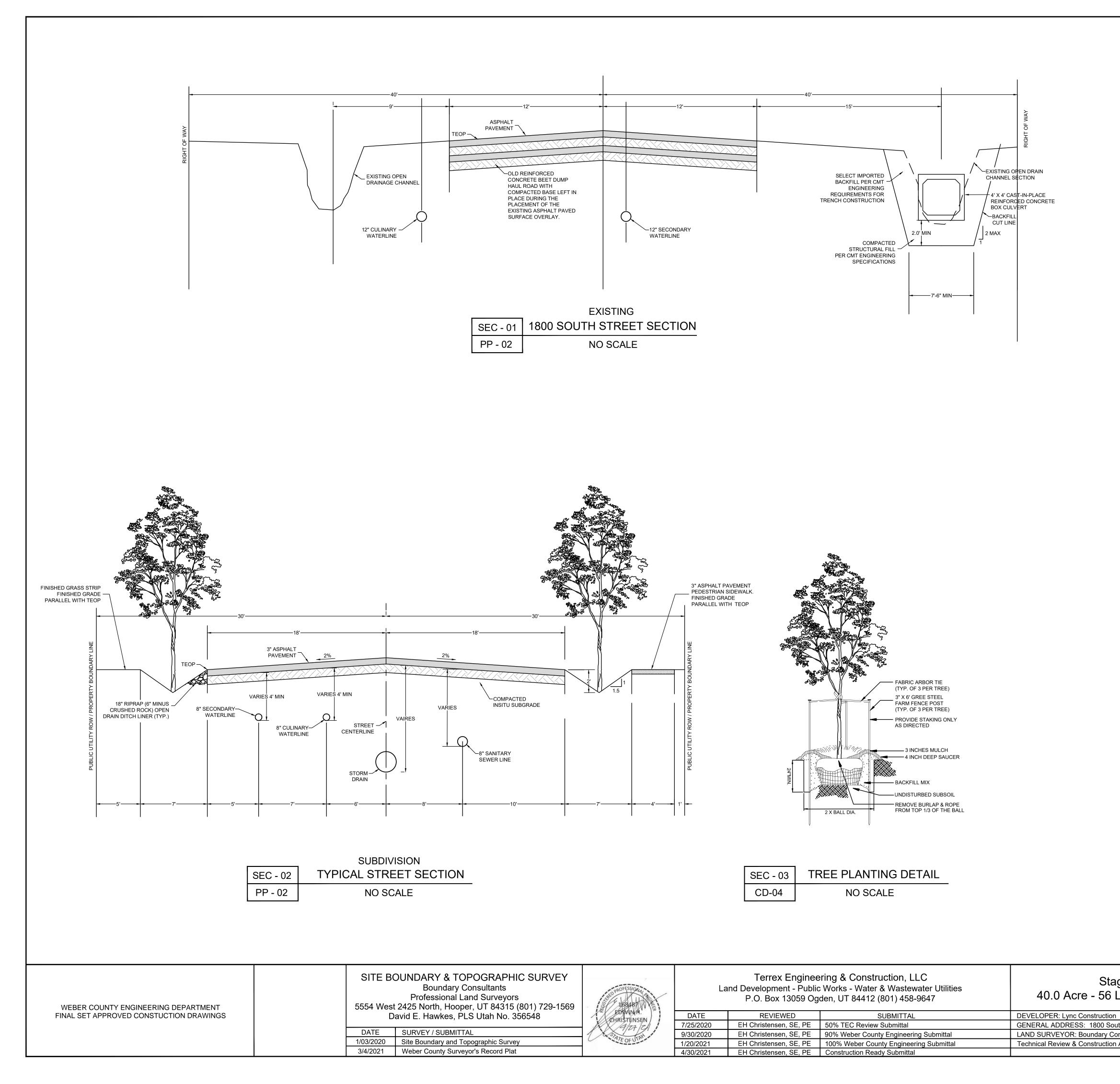


**EXISTING GROUND -**

WEBER COUNTY ENGINEERING DEPARTMENT FINAL SET APPROVED CONSTUCTION DRAWINGS	SITE BOUNDARY & TOPOGRAPH Boundary Consultants Professional Land Surveyor 5554 West 2425 North, Hooper, UT 84315 David E. Hawkes, PLS Utah No. 3		
	DATE	SURVEY / SUBMITTAL	
	1/03/2020	Site Boundary and Topographic Surve	
	3/4/2021	Weber County Surveyor's Record Pla	



HIC SURVEY ors 5 (801) 729-1569	State PROFESSIONAL SEC	La	40.0 Acre -		
356548	CHRISTENSEN	DATE	REVIEWED	SUBMITTAL	DEVELOPER: Lync Cons
	X 4/27/21	7/25/2020	EH Christensen, SE, PE	50% TEC Review Submittal	GENERAL ADDRESS: 1
	ATE OF UTAH	9/30/2020	EH Christensen, SE, PE	90% Weber County Engineering Submittal	LAND SURVEYOR: Bour
vey		1/20/2021	EH Christensen, SE, PE	100% Weber County Engineering Submittal	Technical Review & Cons
lat		4/30/2021	EH Christensen, SE, PE	Construction Ready Submittal	



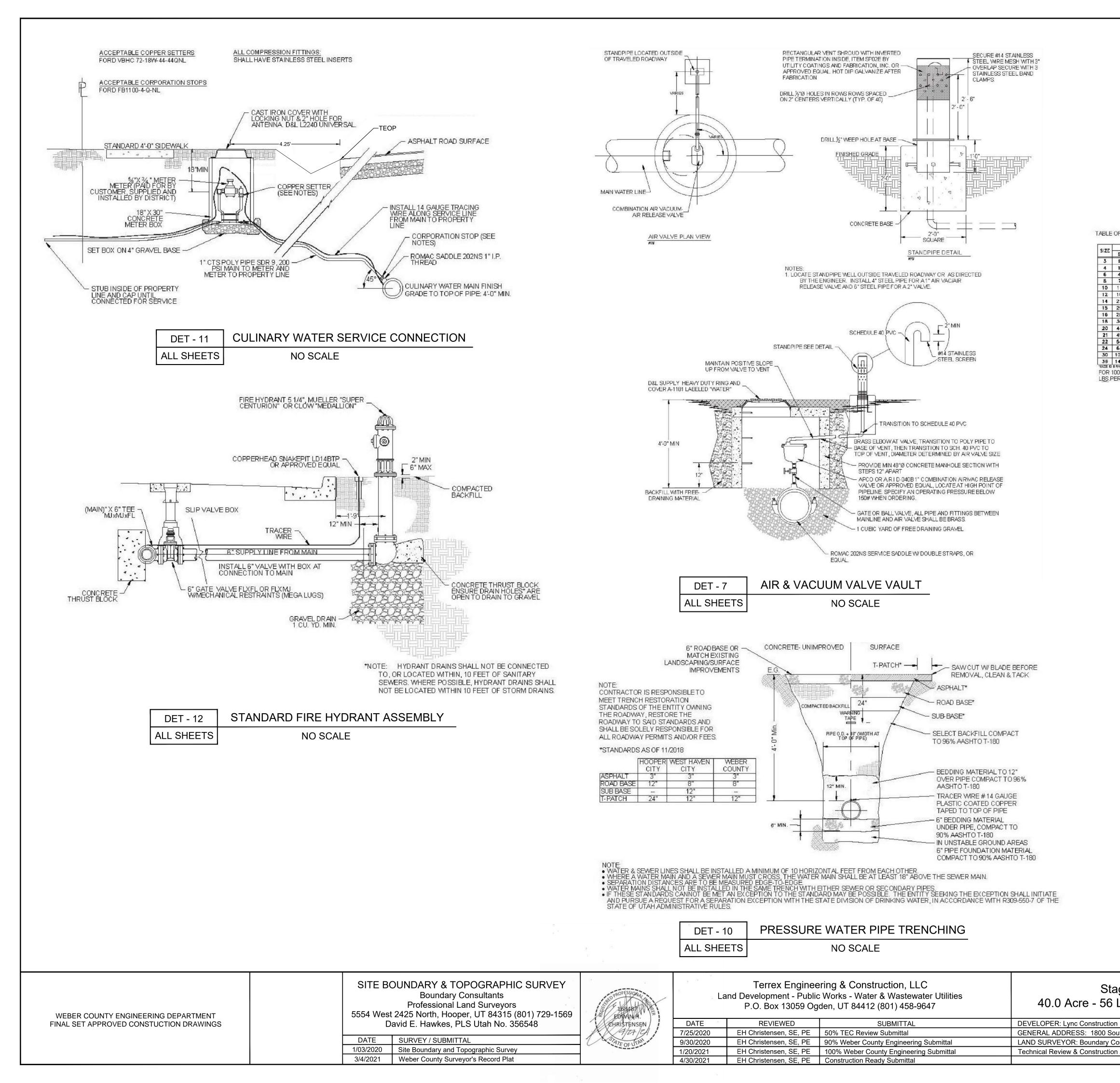
Stagecoach Estates 40.0 Acre - 56 Lot Residential Development

STREET SECTION DETAILS

GENERAL ADDRESS: 1800 South 3800 West, West Weber, Utah LAND SURVEYOR: Boundary Consultants / David E. Hawkes, PLS Technical Review & Construction Approval: Weber County Engineering

SHEET

CD-04



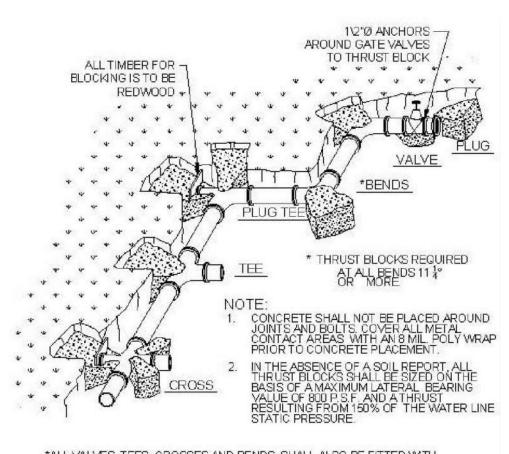


TABLE OF BEARING AREAS IN SQ. FT FOR CONCRETE THRUST BLOCKING

SIZE	BENDS			TEESA	GATE	DEAD	CROSSW/ 1BRANCH	CROSSW/ 2 BRAN.	
	90"	45*	22 %	11 %	TEES*	VALVES	ENDS	PLUGGED	PLUGGED
3	1.0	0.0	0.3	0	0.7	0.5	0.7	0.7	0.7
4	1.8	1.0	0.5	0	1.3	0.5	1.3	1.5	1.3
6	4.0	2.2	1.1	Q	2.8	0.7	2.8	2.8	2.8
8	7.1	3.8	2.0	1.0	5.0	2.4	5.0	5.0	5.0
10	11.1	6.0	3.0	1.5	7.8	4.5	7.8	7.8	7.8
12	15.0	8.6	4.4	2.2	11.3	7.5	11.3	11.3	11.3
14	21.7	11.8	6.0	3.0	15.4	11.0	15.4	15.4	15.4
15	25.0	13.5	7.0	3.5	17.6		176	17.6	17.6
16	28.4	15.3	0.5	4.0	20.0	z	20.0	20.0	20.0
18	36.0	19.4	10.0	5.0	25.4	DESIGN	25.4	25.4	25.4
20	44.2	24.0	12.2	6.1	31.4	8	31.4	31.4	31.4
21	49.0	26.5	13.5	6.8	34.8		34.6	34.6	34.6
22	54.0	29.0	14.8	7.4	38.0	IN	38.0	38.0	38.0
24	64.0	34.5	17.7	8.5	45.0	SPECIAI	45.0	45.0	45.0
30	100.0	54.0	27.6	13.8	71.0	60	71.0	71.0	71.0
36	144.0	78.0	40.0	20.0	102.0	1	102.0	102.0	102.0

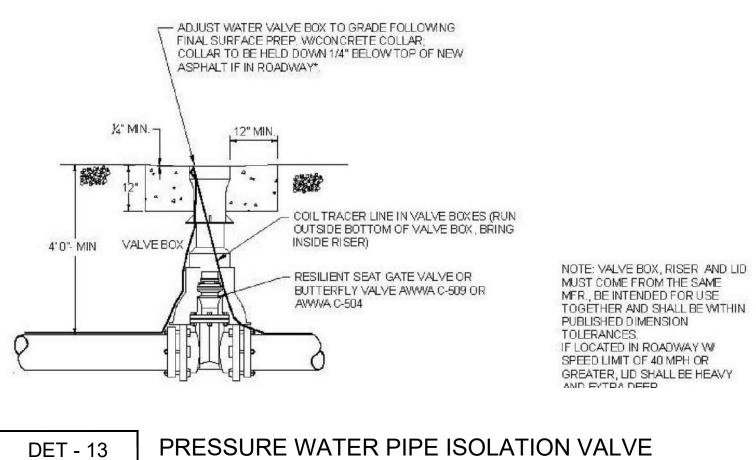
\*ALL VALVES, TEES, CROSSES AND BENDS SHALL ALSO BE FITTED WITH MECHANICAL RESTRAINTS, SUCH AS MEGA LUG OR ROMA GRIP WITH FLUOROPOLYMER COATED BOLTS AND NUTS.

AREAS GIVEN IN TABLE ARE BASED UPON AN INTERNAL STATIC PRESSURE OF 100 P.S.I AND A SOIL BEARING CAPACITY OF 1000 LBS PER SQ. ET. BEARING AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

F=ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS/SQ. IN.<br/>ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.EXAMPLE: TO FIND BEARING AREA FOR 8"-90° BEND WITH A STATIC INTERNAL<br/>PRESSURE OF 150 P.S.I AND WITH A SOIL BEARING CAPACITY OF 3000 LBS. PER SQ.<br/>FT.<br/>F=1.5 / 3=0.5 TABULATED VALUE = 7.1 SQ. FT.<br/>0.5 X 7.1=3.56 ~ 4 SQ. FT. (~OR 2FT. LONG BY 2FT. HIGH.)

FOR 100 P.S.I. INTERNAL STATIC PRESSURE AND 100	)(
LBS.PER SQ. FT. SOIL BEARING CAPACITY.	

DET - 8	THRUST BLOCKING
ALL SHEETS	NO SCALE



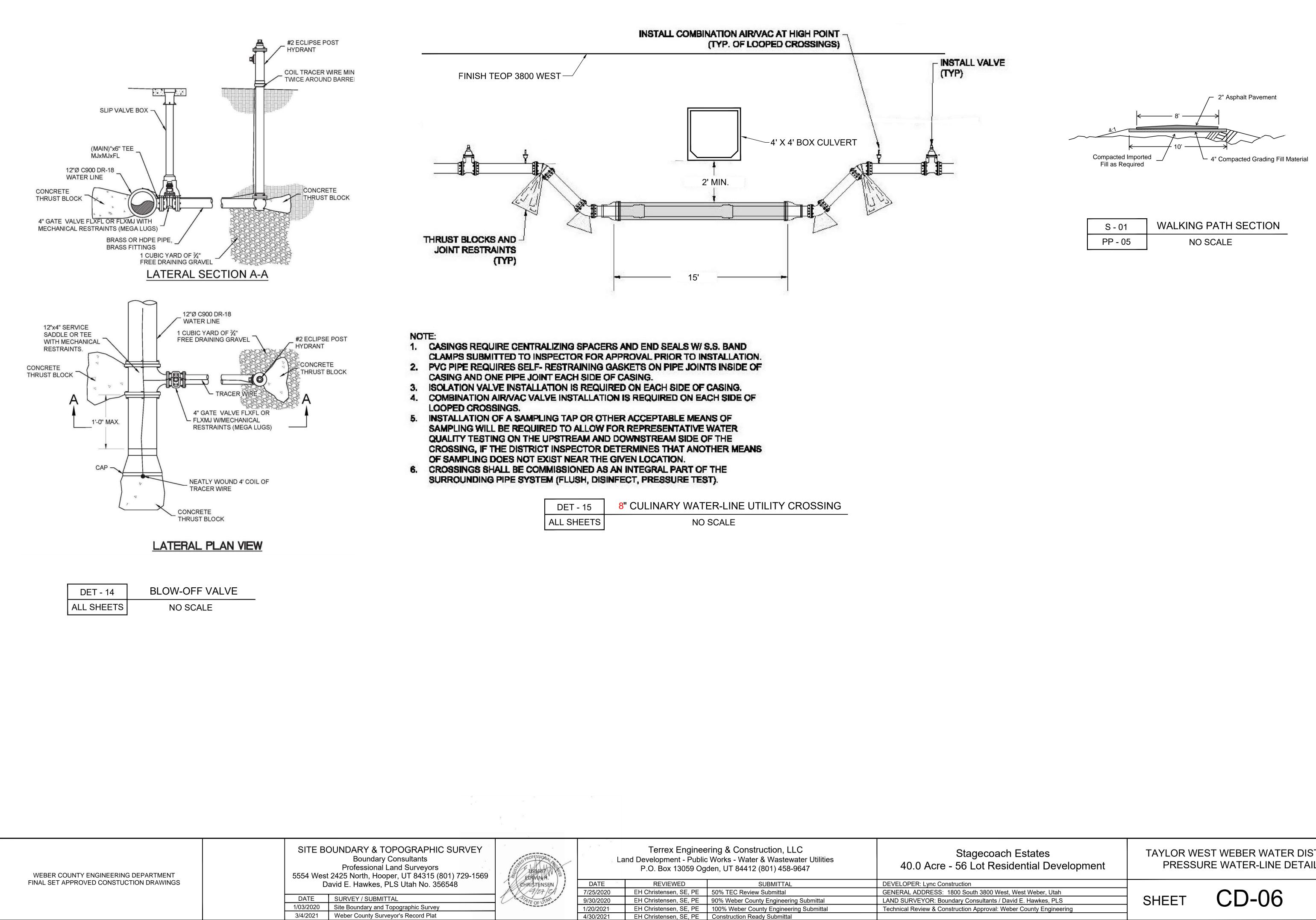
ALL SHEETS NO SCALE

Stagecoach Estates 40.0 Acre - 56 Lot Residential Development TAYLOR WEST WEBER WATER DISTRICT PRESSURE WATER-LINE DETAILS

GENERAL ADDRESS: 1800 South 3800 West, West Weber, Utah LAND SURVEYOR: Boundary Consultants / David E. Hawkes, PLS Technical Review & Construction Approval: Weber County Engineering

SHEET

CD-05



C SURVEY 5 (801) 729-1569 C SURVEY Terrex Engineering & Construction, LLC Land Development - Public Works - Water & Wastewater Utilities P.O. Box 13059 Ogden, UT 84412 (801) 458-9647	40.0 Acre
56548 CHRISTENSEN DATE REVIEWED SUBMITTAL	DEVELOPER: Lync Con
7/25/2020 EH Christensen, SE, PE 50% TEC Review Submittal	GENERAL ADDRESS: 2
9/30/2020 EH Christensen, SE, PE 90% Weber County Engineering Submittal	LAND SURVEYOR: Bou
Y         1/20/2021         EH Christensen, SE, PE         100% Weber County Engineering Submittal	Technical Review & Con
4/30/2021 EH Christensen, SE, PE Construction Ready Submittal	

S - 01	WALKING PATH SECTION
PP - 05	NO SCALE

TAYLOR WEST WEBER WATER DISTRICT PRESSURE WATER-LINE DETAILS