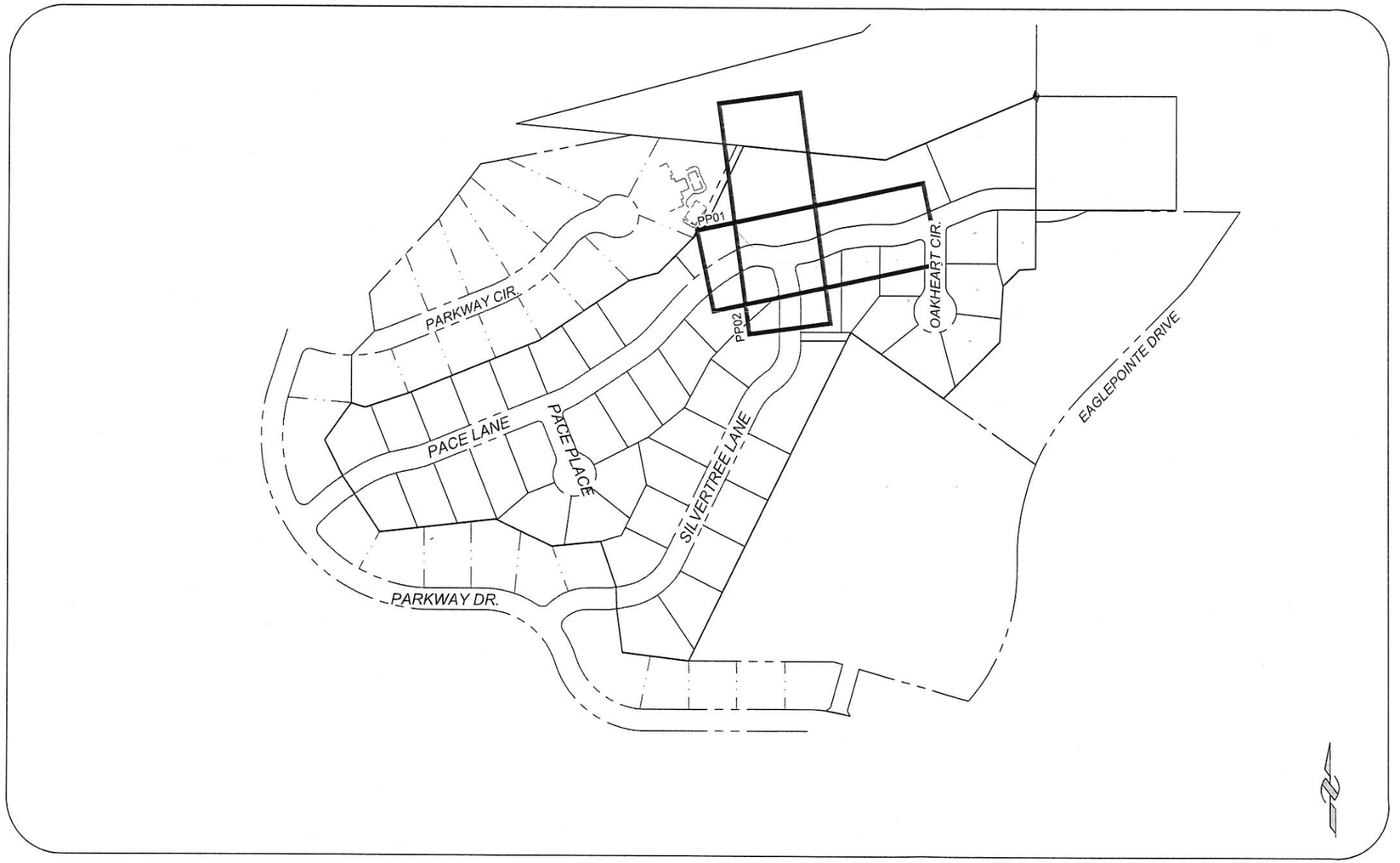
EAGLEPOINTE ESTATES
UTILITY/ROAD IMPROVEMENTS
FEBRUARY 2015

LOCATED IN SECTION 13, TOWNSHIP 1 NORTH, RANGE 1 WEST, SALT LAKE BASE AND MERIDIAN, NORTH SALT LAKE, DAVIS COUNTY, UTAH



NOTES

1. The Owner/Developer of the project is Sky Properties. Steve Israelsen is the project manager. The office number is (801) 292–1400.
2. The Engineer for the project is Bingham Engineering. Judd Lawrence is the prime contact regarding design, surveying, and revisions. He can be reached at 801–532–2520.
3. All road, water, storm drain and secondary water construction shall conform to the requirements of North Salt Lake. Paul Ottoson is the City Engineer. The North Salt Lake City office number is 801–335–8700. Coordinate all inspections and testing with North Salt Lake.
4. All sewer construction shall conform to the requirements of the South Davis Sewer District (SDSD). The office number is 801–295–3469. Coordinate all sewer testing and inspections with SDSD.
5. Contractor to contact Blue Stakes (532–5000) prior to any excavation.
6. Deborah Rauhe is the planner for Rocky Mountain Power. Her number is 801–220–7278.
7. Beverly Eldredge is the planner for Questar. Her number is 801–324–3967.
8. Gary Weaver is the planner for CenturyLink. His number is 801–626–5380.
9. The benchmark for this development shall be brass cap monument at Pace Lane and Parkway Drive. The elevation is 5085.90.

INDEX OF DRAWINGS

NOTICE TO CONTRACTORS

IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO CONTACT 'BLUE STAKES' UTILITY LOCATION CENTER AT 1–800–662–4111, AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION ACTIVITIES.

SITE DEVELOPED BY:
EAGLEPOINTE DEVELOPMENT, L.C.
585 W. 500 S. SUITE 110
BOUNTIFUL, UT 84010
PH: (801) 292-1400

EAGLEPOINTE ESTATES UTILITY/ROAD IMPROVEMENTS
CONSTRUCTION DRAWINGS

01/05/2015 Bingham Engineering Proj\dwg\5263\5263 TITLE–INDEX.dwg

LICENSED PROFESSIONAL ENGINEER No. 5150191-2202 JEREMY J. SHAFFER STATE OF UTAH

REV.	DATE	DESCRIPTION
B	2/17/15	ISSUED FOR BID
A	1/5/15	CITY REVIEW

SCALE
0 150 300 450
Scale in Feet

EAGLEPOINTE ESTATES
VICINITY MAP & INDEX SHEET

PREPARED BY:
BINGHAM ENGINEERING
5160 WILEY POST WAY
SALT LAKE CITY, UTAH 84116
(801) 532–2520

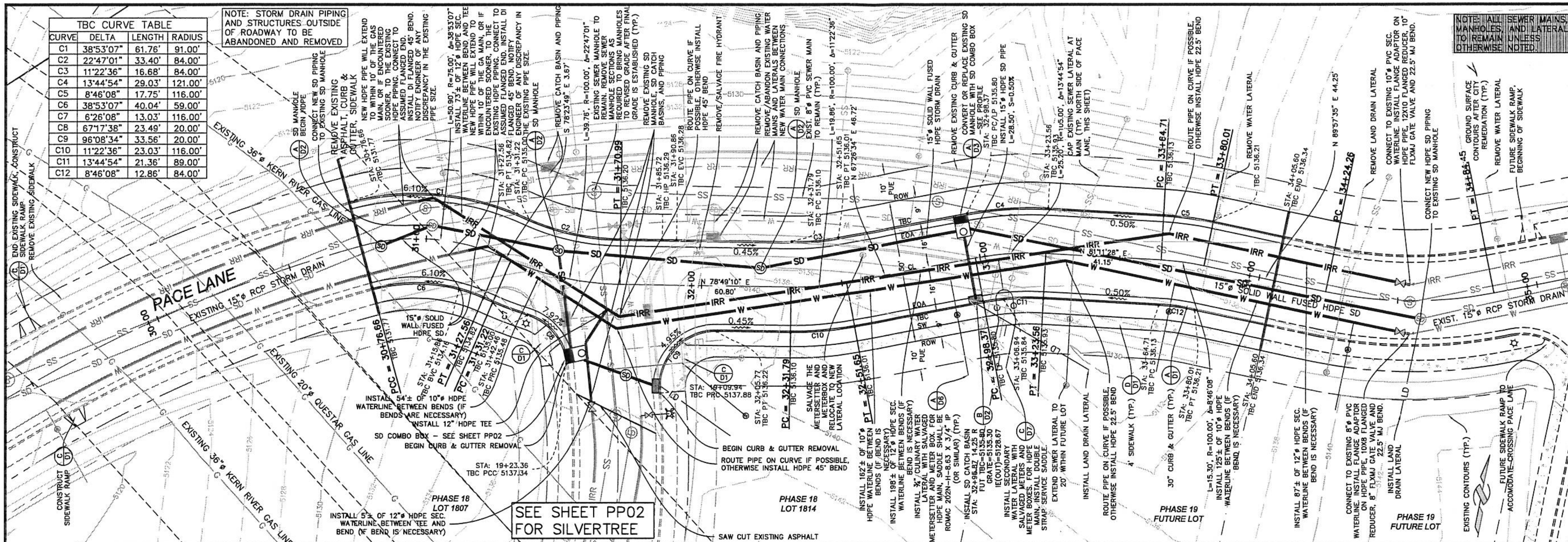
APPROVED CITY ENGINEER DATE

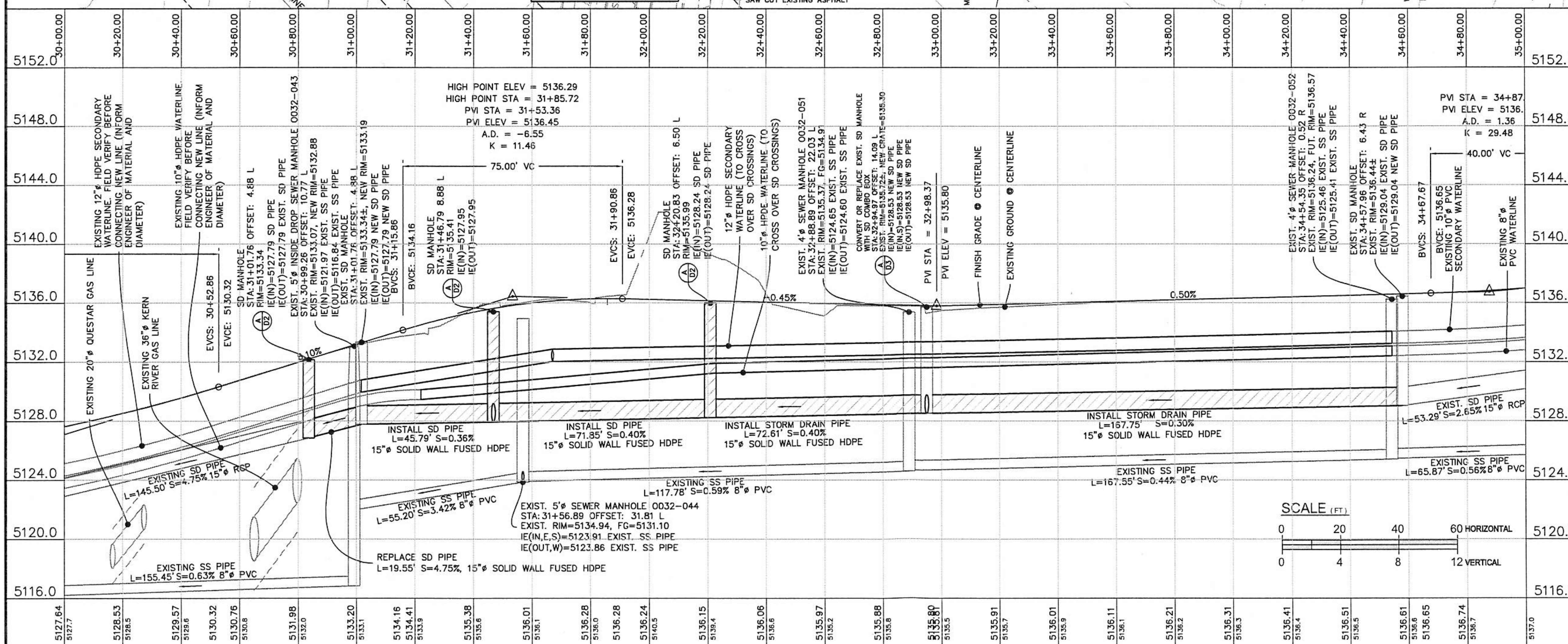
Sht G1 of 1

TBC CURVE TABLE			
CURVE	DELTA	LENGTH	RADIUS
C1	38°53'07"	61.76'	91.00'
C2	22°47'01"	33.40'	84.00'
C3	11°22'36"	16.68'	84.00'
C4	13°44'54"	29.03'	121.00'
C5	8°46'08"	17.75'	116.00'
C6	38°53'07"	40.04'	59.00'
C7	6°26'08"	13.03'	116.00'
C8	67°17'38"	23.49'	20.00'
C9	96°08'34"	33.56'	20.00'
C10	11°22'36"	23.03'	116.00'
C11	13°44'54"	21.36'	89.00'
C12	8°46'08"	12.86'	84.00'

NOTE: STORM DRAIN PIPING AND STRUCTURES OUTSIDE OF ROADWAY TO BE ABANDONED AND REMOVED

NOTE: ALL SEWER MAINS, MANHOLES, AND LATERALS TO REMAIN UNLESS OTHERWISE NOTED.





NOTES:

1. POWER, GAS, CABLE AND PHONE WILL BE LOCATED IN 10' PUE IN FRONT OF EACH LOT. LOCATIONS OF ANY UTILITIES IN SIDE YARD EASEMENTS WILL BE SPECIFICALLY IDENTIFIED.

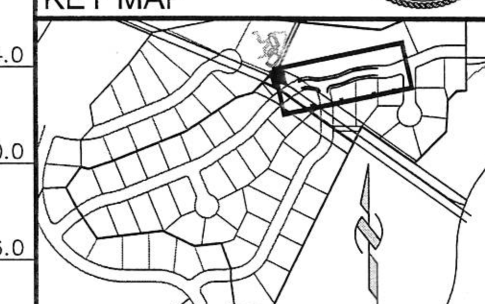
LEGEND

Symbol	Description
W	PROPOSED HDPE WATERLINE
W	PROPOSED PVC WATERLINE
W	EXISTING HDPE WATERLINE
W	EXISTING PVC WATERLINE
W	ABANDON/REMOVE WATERLINE
SS	PROPOSED SANITARY SEWER
SS	EXISTING SANITARY SEWER
SS	ABANDON/REMOVE SEWER
SD	PROPOSED STORM DRAIN
SD	EXISTING STORM DRAIN
SD	ABANDON/REMOVE STORM DRAIN
IRR	PROPOSED HDPE SEC. WATER
IRR	PROPOSED PVC SEC. WATER
IRR	EXISTING HDPE SEC. WATER
IRR	EXISTING PVC SECONDARY WATER
IRR	ABANDON/REMOVE SEC. WATER
LD	PROPOSED LAND DRAIN
LD	EXISTING LAND DRAIN
LD	ABANDON/REMOVE LAND DRAIN
	FUTURE CURB AND GUTTER
	EXISTING CURB AND GUTTER
	REMOVE CURB AND GUTTER
	FUTURE SIDEWALK
	EXISTING SIDEWALK
	PROPOSED CENTERLINE
	FUTURE CENTERLINE
	EXISTING CENTERLINE
	SECTION BOUNDARY
	FUTURE ROW
	EXISTING RIGHT OF WAY
	LOT LINE

- CROSS FITTING
- ELBOW FITTING
- TEE FITTING
- SECONDARY WATER METER
- PROPOSED STREET LIGHT
- SEWER MANHOLE
- STORM DRAIN MANHOLE
- CURB INLET BOX
- WATER METER
- FIRE HYDRANT
- WATER VALVE

LICENSED PROFESSIONAL ENGINEER No. 5150191-2202 JEREMY J. SHAFFER STATE OF UTAH

KEY MAP



Rev.	By	Date	Remarks
E	JJS	02/17/15	ISSUED FOR BID
D	JJS	02/12/15	REVIEW
C	JJS	02/04/15	REVIEW
B	JJS	02/02/15	REVIEW

SKY PROPERTIES

EAGLEPOINTE ESTATES
PLAN AND PROFILE
PACE LANE
STA:30+00 TO STA:35+00

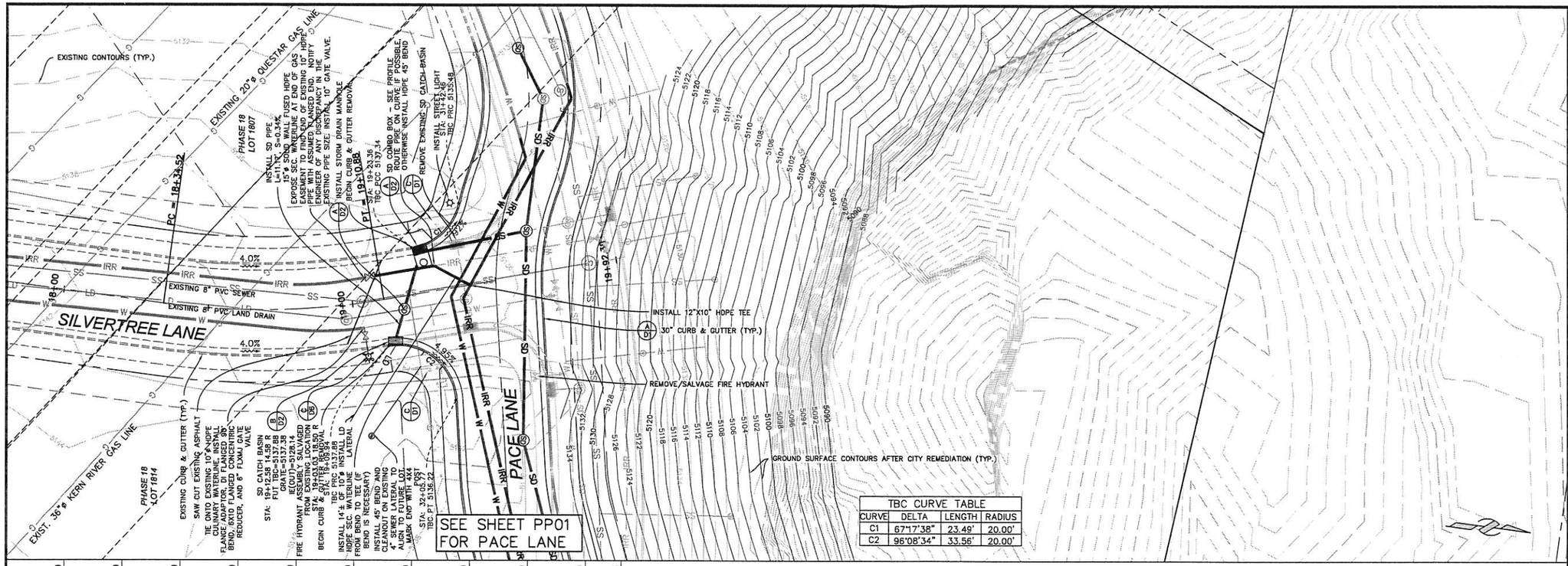
BINGHAM ENGINEERING
SALT LAKE CITY - (801) 532-2520
OGDEN - (801) 399-1662

Dsn: JJS
Drw: JJS
Chk: JRL
Rvw: JRL

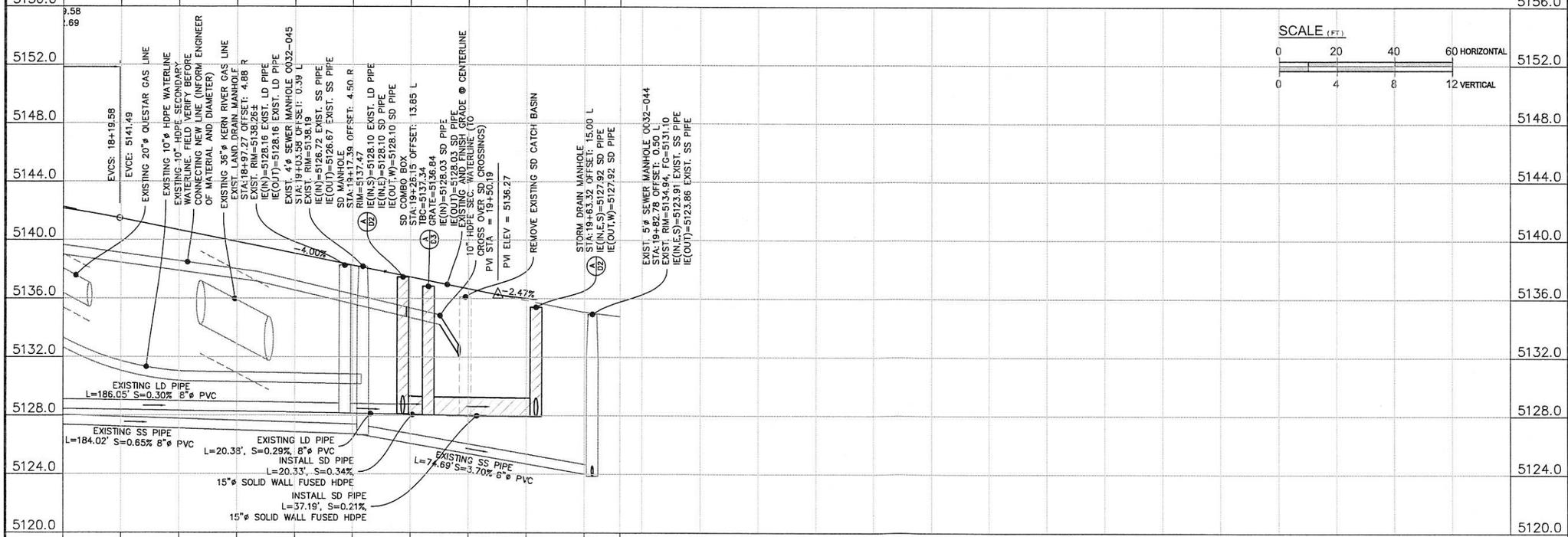
Sht PP01 of 3

Print Date: 02/12/2015 Created: 12/29/14 Proj. # 5263

C:\5101\5101 Proj\dwg\5263\5263 PACE PLPF.dwg Bingham Engineering



TBC CURVE TABLE			
CURVE	DELTA	LENGTH	RADIUS
C1	67°17'38"	23.49'	20.00'
C2	96°08'34"	33.56'	20.00'



SCALE (FT)

0 20 40 60 HORIZONTAL

0 4 8 12 VERTICAL

NOTES:

1. POWER, GAS, CABLE AND PHONE WILL BE LOCATED IN 10' PUE IN FRONT OF EACH LOT. LOCATIONS OF ANY UTILITIES IN SIDE YARD EASEMENTS WILL BE SPECIFICALLY IDENTIFIED.

LEGEND

- W PROPOSED HDPE WATERLINE
- W PROPOSED PVC WATERLINE
- W EXISTING HDPE WATERLINE
- W EXISTING PVC WATERLINE
- W ABANDON/REMOVE WATERLINE
- SS PROPOSED SANITARY SEWER
- SS EXISTING SANITARY SEWER
- SS ABANDON/REMOVE SEWER
- SD PROPOSED STORM DRAIN
- SD EXISTING STORM DRAIN
- SD ABANDON/REMOVE STORM DRAIN
- IRR PROPOSED HDPE SECONDARY WATE
- IRR PROPOSED PVC SECONDARY WATER
- IRR EXISTING HDPE SECONDARY WATER
- IRR EXISTING PVC SECONDARY WATER
- IRR ABANDON/REMOVE SECONDARY WA
- LD PROPOSED LAND DRAIN
- LD EXISTING LAND DRAIN
- LD ABANDON/REMOVE LAND DRAIN
- FUTURE CURB AND GUTTER
- EXISTING CURB AND GUTTER
- REMOVE CURB AND GUTTER
- FUTURE SIDEWALK
- EXISTING SIDEWALK
- PROPOSED CENTERLINE
- FUTURE CENTERLINE
- EXISTING CENTERLINE
- SECTION BOUNDARY
- FUTURE ROW
- EXISTING RIGHT OF WAY
- LOT LINE
- (S) SEWER MANHOLE
- (SD) STORM DRAIN MANHOLE
- CURB INLET BOX
- WATER METER
- FIRE HYDRANT
- WATER VALVE
- CROSS FITTING
- ELBOW FITTING
- TEE FITTING
- SECONDARY WATER METER
- PROPOSED STREET LIGHT

LICENSED PROFESSIONAL ENGINEER
No. 5150191-2202
JEREMY J. SHAFFER
STATE OF UTAH

KEY MAP

Rev.	By	Date	Remarks
D	JJS	02/17/15	ISSUED FOR BID
C	JJS	02/04/15	REVIEW
B	JJS	02/02/15	REVIEW
A	JJS	01/05/15	CITY REVIEW

SKY PROPERTIES

EAGLEPOINTE ESTATES

PLAN AND PROFILE

SILVERTREE LANE

STA:18+00 TO STA:19+92.38

BINGHAM ENGINEERING
SALT LAKE CITY - (801) 532-2520
OGDEN - (801) 399-1662

Dsn: JJS Drw: JJS Chk: JRL Rvw: JRL

Sht PP02 of 3

Print Date: 02/04/2015 Created: 12/29/14 Proj. # 5263

C:\5101\5101 Proj\dwg\5263\5263 SILVERTREE PLPF.dwg Bingham Engineering

NOTES:

1. SHUT OFF EXISTING WATER LATERALS AT MAIN. CLOSE CORP STOP VALVE, CUT LATERAL AT CORP STOP, BACKFILL AND COMPACT ALL EXCAVATED MATERIAL.

2. CAP EXISTING SEWER LATERALS AT MAIN. INSTALL A CAP OR PLUG PER SDSD REQUIREMENTS, BACKFILL AND COMPACT ALL EXCAVATED MATERIAL. LATERAL PIPE SHALL BE ABANDONED IN PLACE.

3. REMOVE AND CAP EXISTING DUAL LATERALS ON EXISTING MAIN. REMOVE THE EXISTING LATERAL FROM THE SADDLE AND INSTALL A BRASS PLUG IN THE SADDLE PER NSL REQUIREMENTS.

4. CAP EXISTING LAND DRAIN LATERALS AND PATCH EXISTING STORM DRAIN MAIN. BACKFILL AND COMPACT ALL EXCAVATED MATERIAL.

CAP EXISTING WATER LATERAL (SEE NOTE 1)
CAP EXISTING SEWER LATERAL (SEE NOTE 2)
SALVAGE EXISTING SEC. WATER METERS
CAP EXISTING SEWER LATERAL (SEE NOTE 2)
SALVAGE EXISTING WATER METER
CAP EXISTING SEWER LATERAL (SEE NOTE 2)
SALVAGE EXISTING WATER METER
SALVAGE EXISTING SEC. WATER METERS
CAP EXISTING SEWER LATERAL (SEE NOTE 2)
CAP EXISTING WATER LATERAL (SEE NOTE 1)
CAP EXISTING SEC. WATER LATERAL (SEE NOTE 3)
CAP EXISTING LAND DRAIN LATERAL (SEE NOTE 4)
CAP EXISTING SEWER LATERAL (SEE NOTE 2)
CAP EXISTING WATER LATERAL (SEE NOTE 1)

PACE LANE
SILVERTREE LANE
OAKHEART CIRCLE
SALVAGE EXISTING SEC. WATER METERS

1807
1806
1814

SCALE (FT)
0 30 60 90

LICENSED PROFESSIONAL ENGINEER
No. 5150191-2202
JEREMY J. SHAFFER
STATE OF UTAH

SKY PROPERTIES

EAGLEPOINTE ESTATES

EXISTING LATERALS

BINGHAM ENGINEERING
SALT LAKE CITY - (801) 532-2520
OGDEN - (801) 399-1662

Dsn: JJS
Drw: JJS
Chk: JRL
Rvw: JRL

Sht P03 of 3

Print Date: 02/17/2015 | Created: 02/16/15 | Proj. # 5263

Rev.	By	Date	Remarks
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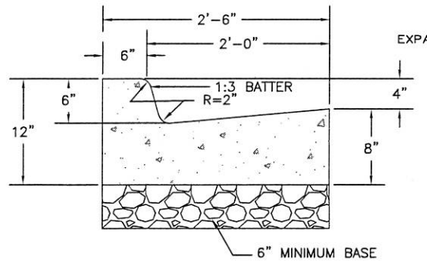
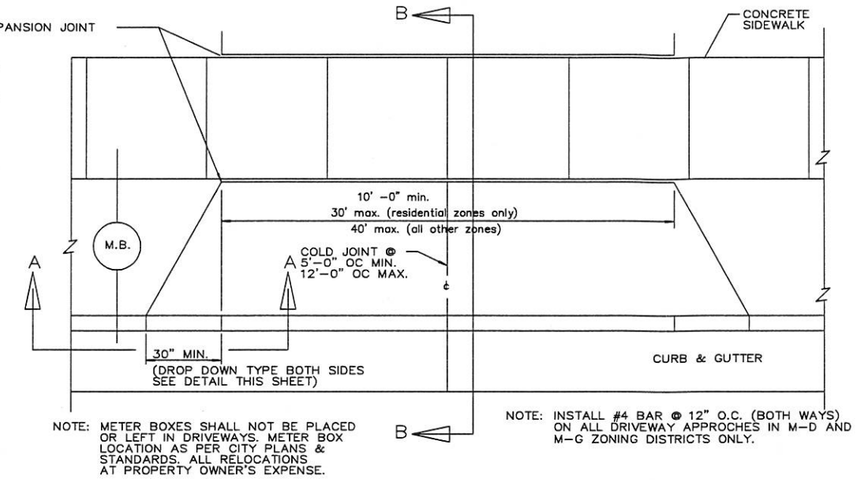
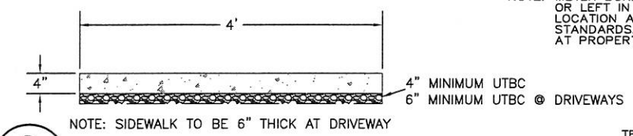


A — TYPICAL 30" HIGHBACK CURB & GUTTER SECTION



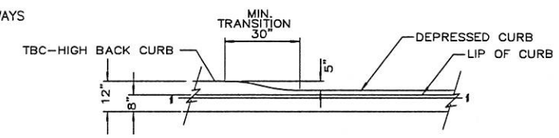
NOTE: METER BOXES SHALL NOT BE PLACED OR LEFT IN DRIVEWAYS. METER BOX LOCATION AS PER CITY PLANS & STANDARDS. ALL RELOCATIONS AT PROPERTY OWNER'S EXPENSE.

NOTE: INSTALL #4 BAR @ 12" O.C. (BOTH WAYS) ON ALL DRIVEWAY APPROCHES IN M-D AND M-G ZONING DISTRICTS ONLY.

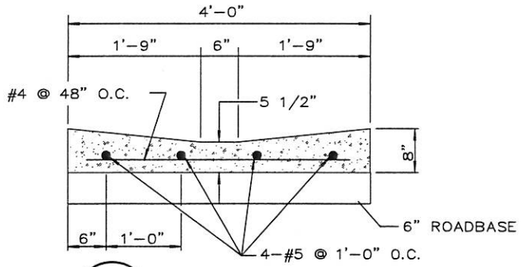


NOTE: SIDEWALK TO BE 6" THICK AT DRIVEWAY

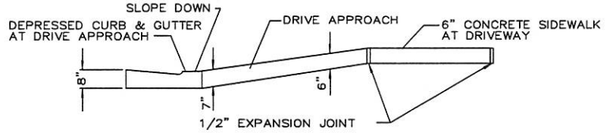
D — TYPICAL SIDEWALK SECTION



SECTION A-A



E — CONCRETE WATERWAY



SECTION B-B

B — TYPICAL DRIVEWAY, SIDEWALK & 30" HIGH BACK CURB & GUTTER PLAN

GENERAL NOTES:

1 A MINIMUM 6" DEPTH OF ROADBASE MATERIAL SHALL BE PLACED TO GRADE AND COMPACTED TO 95% OF MAXIMUM DENSITY, UNDER TBC DRIVEWAY, WATERWAY, AND SIDEWALK ADJACENT TO DRIVEWAY, PRIOR TO PLACEMENT OF CONCRETE.

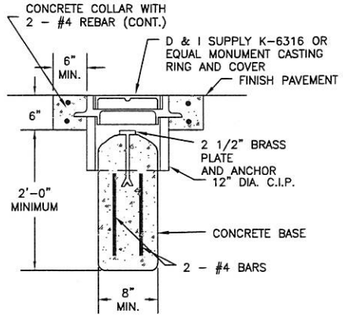
2 A MINIMUM 4" DEPTH OF ROADBASE MATERIAL SHALL BE PLACED TO GRADE AND COMPACTED TO 95% OF MAXIMUM DENSITY UNDER SIDEWALK PRIOR TO PLACEMENT OF CONCRETE.

3 WHERE CONSTRUCTION IS ADJACENT TO STATE HIGHWAY FRONTAGE, STATE HIGHWAY DEPARTMENT REQUIREMENTS SHALL GOVERN.

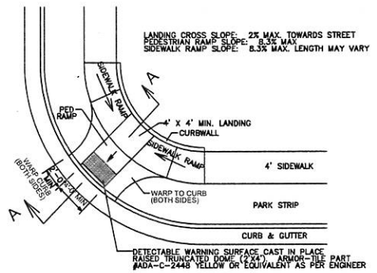
4 CONCRETE SHALL BE 3/4-INCH MAXIMUM AGGREGRATE, 6.3 BAGS PER YARD OF TYPE 2 L.A. CEMENT, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. 6+/-% ENTRAINED AIR.

5 EXPANSION JOINTS FOR CURB & GUTTER SHALL BE SPACED NOT MORE THAN EVERY 50 FT. AND FOR SIDEWALK, NOT MORE THAN EVERY 50 FT. EXPANSION JOINTS SHALL BE OF APPROVED MATERIAL. CONCENTRATION JOINTS SHALL BE SPACED EVERY 10' IN CURB & GUTTER AND NO MORE THAN 4' IN SIDEWALK.

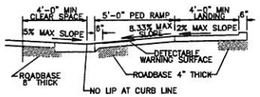
6 ALL WORK SHALL BE IN COMPLIANCE WITH NORTH SALT LAKE STANDARDS. IN THE EVENT OF A CONFLICT BETWEEN DETAILS IN THIS PLAN SET AND NORTH SALT LAKE STANDARDS, THE NORTH SALT LAKE STANDARDS SHALL APPLY.



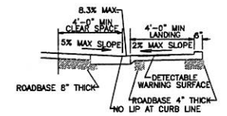
J — SURVEY MONUMENT SECTION



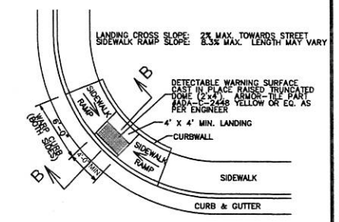
TYPE 1 PEDESTRIAN RAMP



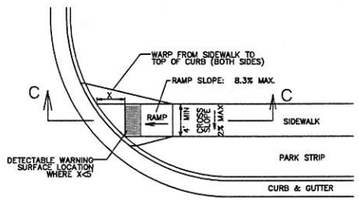
SECTION A-A



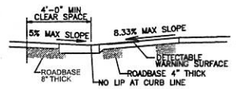
SECTION B-B



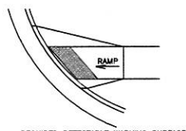
TYPE 1A PEDESTRIAN RAMP



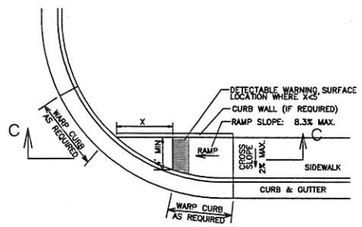
TYPE 2 PEDESTRIAN RAMP



SECTION C-C

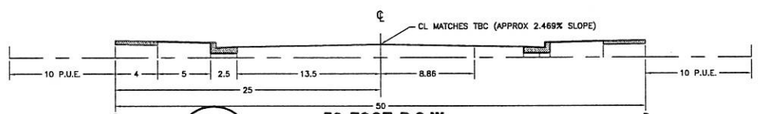


REQUIRED DETECTABLE WARNING SURFACE LOCATION WHERE X > 5' FOR TYPE 2 & 2A



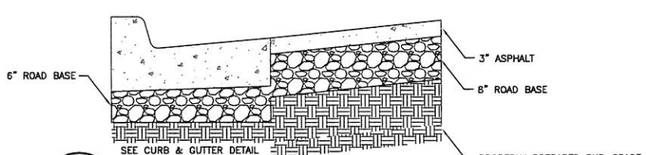
TYPE 2A PEDESTRIAN RAMP

C — TYPICAL HANDICAP RAMP



H — 50 FOOT R.O.W. RESIDENTIAL NEIGHBORHOODS

NOTE: 27' OF ASPHALT IS THE NORTH SALT LAKE CITY MINIMUM



I — TYPICAL PAVEMENT SECTION A RESIDENTIAL STREETS

LICENSED PROFESSIONAL ENGINEER No. 5101101-2202 JEREMY J. SHAFFER 9/30/13 STATE OF UTAH

Rev.	By	Date	Remarks
0	JJS	09/30/13	ISSUED FOR CONSTRUCTION
C	JJS	07/11/13	CITY REVIEW
B	JJS	07/02/13	CITY REVIEW
A	JJS	06/13/13	CITY REVIEW

SKY PROPERTIES

EAGLEPOINTE

ROAD DETAILS

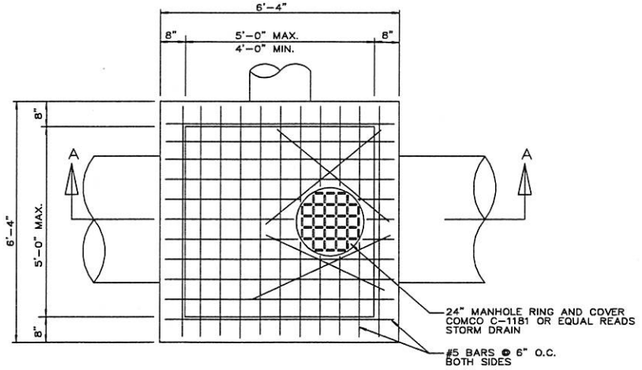
BINGHAM ENGINEERING
SALT LAKE CITY - (801) 532-2520
OGDEN - (801) 399-1662

Dsn: JRL Drw: STAF Chk: JRL Rvw: JRL

Sht D1 of

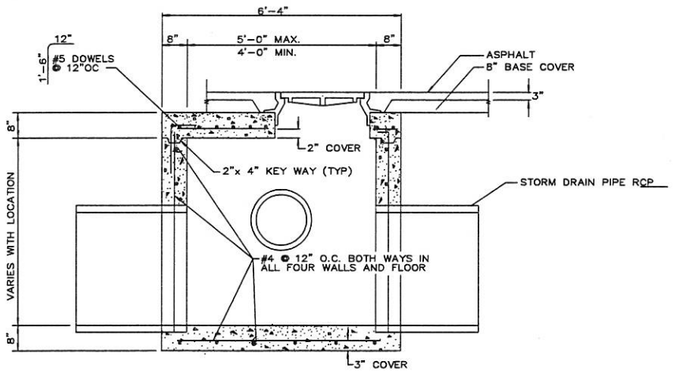
Print Date: 02/17/2015 Created: 10/18/12 Proj # 5101

C:\5101\5101 Proj\dwg\Details\5101 DET1-8 rev 1.dwg Bingham Engineering

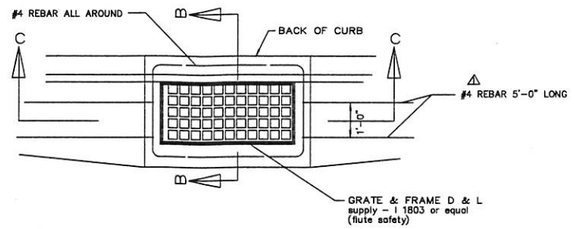


PLAN

NOTE: COVER ALL STORM DRAINS 1'-0" MIN. DESIGN VOLOCITY OF 2' / SEC.



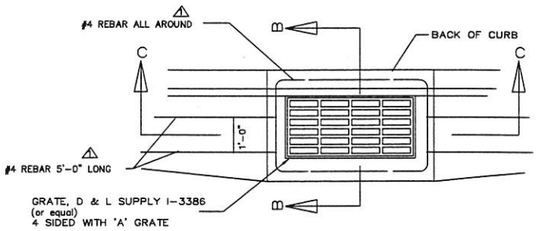
SECTION A-A



PLAN

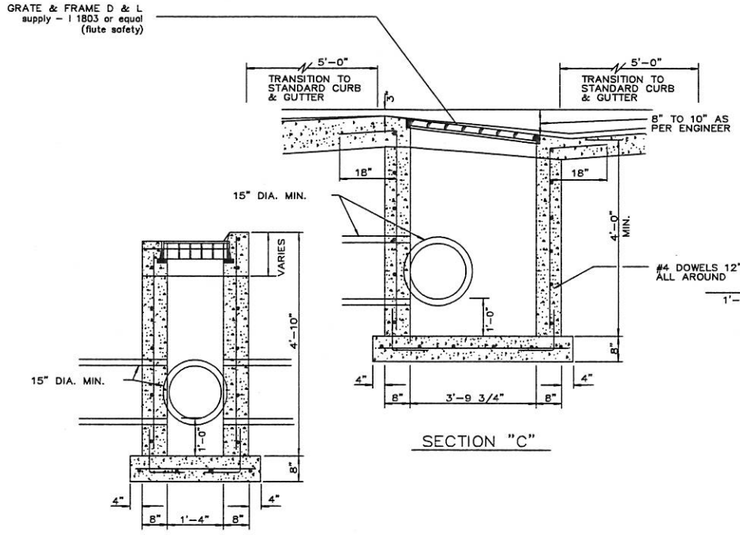
INLET BOX - TYPE I SINGLE

SCALE 3/8" = 1'-0"



INLET BOX - TYPE II SINGLE

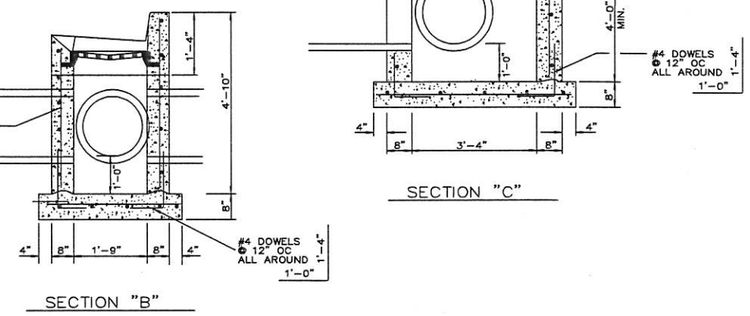
SCALE 3/8" = 1'-0"



SECTION "C"

SECTION "B"

TYPICAL INLET BOX IN SLOPED STREET



SECTION "B"

SECTION "C"

TYPICAL INLET BOX IN LOW AREA OF STREET

A — STORM DRAIN MANHOLE

NOTES:

1. USE 1-1/2" MIN. CLEARANCE FOR REINFORCING STEEL FROM THE FACE OF THE CONCRETE UNLESS OTHERWISE SHOWN.
2. FINISH ALL MANHOLE INVERTS WITH A STEEL TROWEL.
3. STATIONS ON MANHOLES SHOWN ON PLAN APPLY TO THE SHAFT CENTER. ELEVATIONS ARE SHOWN AT THE SHAFT
4. CENTER AND REFER TO THE PROLONGED INVERT GRADE.
5. PRECAST UNITS SHALL BE APPROVED BY NORTH SALT LAKE PUBLIC WORKS.

B — CATCH BASIN

STORM DRAINAGE / GRADING NOTES

1. All drainage improvements shall be constructed to the requirements and standards of North Salt Lake Public Works and Engineering Departments.
2. All curb and gutter is designed at 0.4% unless noted otherwise. The minimum allowed by North Salt Lake is 0.3%.
3. Maximum spacing of curb inlet boxes is 850 feet.
4. A minimum cross slope of 2.47% was assumed for all pavement, to facilitate drainage to the gutters.

LICENSED PROFESSIONAL ENGINEER
No. 5101101-2202
JEREMY J. SHAFFER
9/30/13
STATE OF UTAH

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B	JJS	07/02/13	CITY REVIEW
A	JJS	06/13/13	CITY REVIEW

SKY PROPERTIES

EAGLEPOINTE

STORM DRAINAGE DETAILS

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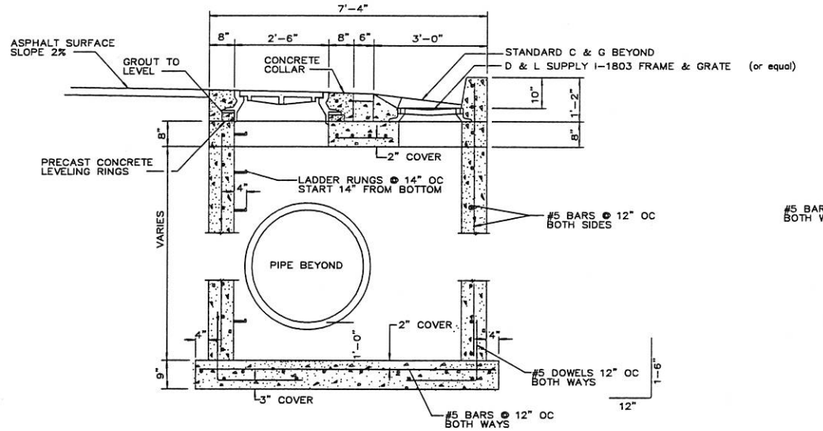

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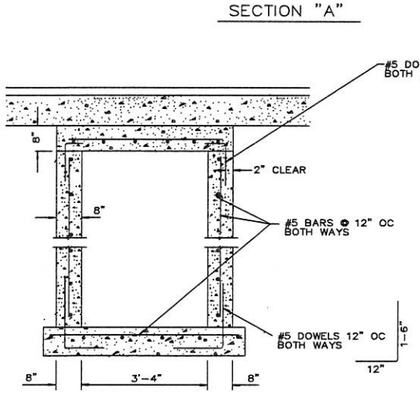
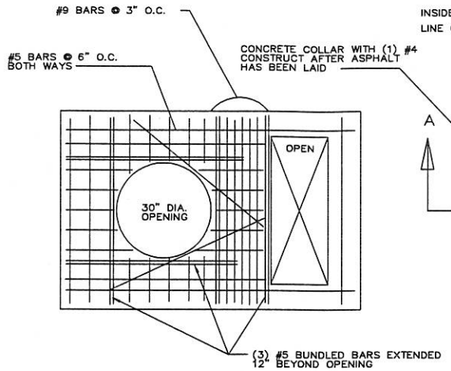
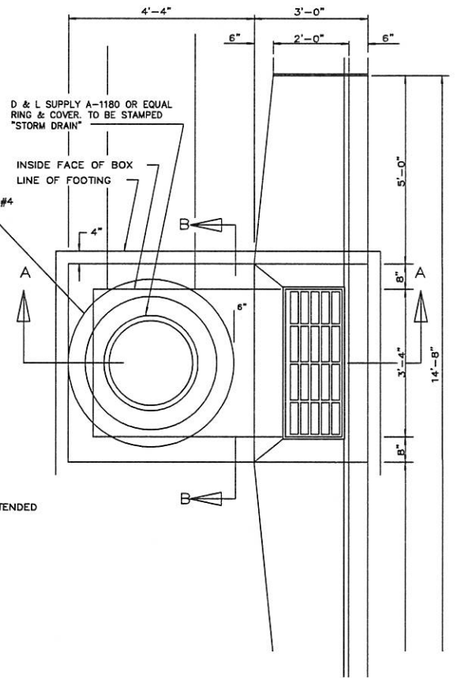


SECTION "B"



TOP SLAB REINFORCEMENT



COMBINATION CLEANOUT-INLET BOX

COMBINATION BOX NOTES:

1. MATERIALS, CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF STATE OF UTAH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADDENDUMS AND SPECIAL PROVISIONS THERETO AND AS DIRECTED BY THE CITY ENGINEERS OR THEIR AUTHORIZED REPRESENTATIVE.
2. ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE 40 AND SHALL HAVE A MINIMUM 2" COVER OR CLEARANCE FROM ALL SURFACES AND OPENINGS, UNLESS OTHERWISE SPECIFIED.
3. IT SHALL BE THE CONTRACTOR'S OPTION TO CUT STEEL IN THE FIELD.
4. ALL CONCRETE SHALL BE CLASS 4000, UNLESS OTHERWISE SPECIFIED.
5. FLOW-LINE ELEVATIONS, PIPE SIZES AND LOCATIONS SHALL BE SHOWN ON OTHER DRAWINGS.
6. THIS BOX IS DESIGNED TO ACCOMMODATE A 6'-8" O.D. PIPE SIZE (MAXIMUM).
7. PRECAST CONCRETE LEVELING COLLAR AVAILABLE IN 4", 6" OR 8" THICKNESS. GROUT UNDER MANHOLE COVER FRAME AS REQUIRED TO LEVEL.
8. FORMING FOR BOTH SIDES OF WALLS IS REQUIRED.
9. IF DEPTH OF BOX FROM FINISHED GRADE TO INVERT ELEVATION DOES NOT EXCEED 6'-0", USE SINGLE MAT OF REINFORCING; FOR 6' TO 12', USE DOUBLE MAT. FOR BOXES EXCEEDING 12', CONSULT WITH COUNTY ENGINEER OR HIS AUTHORIZED REPRESENTATIVE.
10. DEPTH OF THE EXTENSION INLET TO BE AS DIRECTED BY THE CITY ENGINEER OR HIS AUTHORIZED REPRESENTATIVE. MAXIMUM STANDARD IS 18".
11. FOR STANDARD MANHOLE, USE D&L SUPPLY MODEL A-1180 OR EQUIVALENT. FOR STANDARD BICYCLE-SAFE FRAME AND GRATE, USE D&L SUPPLY MODEL I-1803 FOR SLOPED STREETS, MODEL I-3386 FOR LOW POINTS, OR EQUIVALENT. FOR STANDARD LADDER RUNGS, USE M.A. INDUSTRIES, INC. COPOLYMER PROPYLENE PLASTIC STEPS OR EQUIVALENT.
12. REBAR SPLICE TO BE NOT LESS THAN 30 DIAMETERS.

A — NTS COMBINATION BOX

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0	JJS	09/30/13	ISSUED FOR CONSTRUCTION
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B	JJS	07/02/13	CITY REVIEW
A	JJS	06/13/13	CITY REVIEW

SKY PROPERTIES

EAGLEPOINTE

STORM DRAINAGE DETAILS

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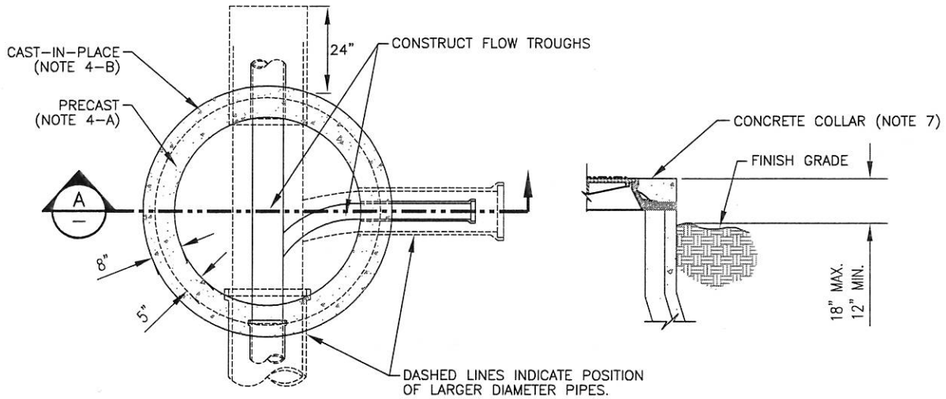

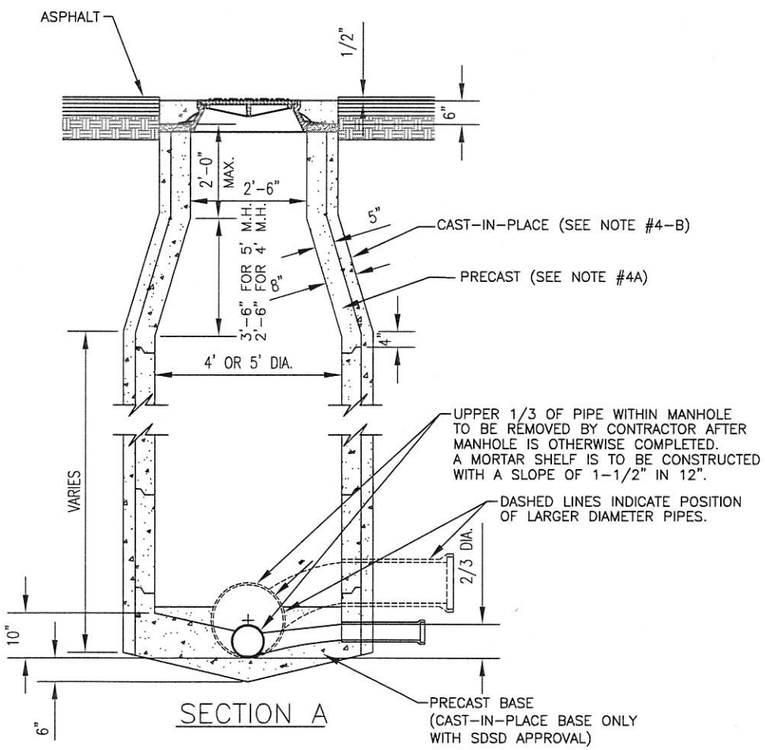

A — **MANHOLE DETAIL**

MANHOLE NOTES

1. FOR SEWERS UNDER 15" DIA. BUILD A 4' DIA. MANHOLE, FOR SEWERS 15" AND LARGER, BUILD A 5' DIA. MANHOLE.
2. GROUT AROUND ALL PIPE OPENINGS WITH 1:2 CONCRETE MORTAR.
3. PLACE FLEXIBLE GASKET-TYPE SEALANT IN ALL MANHOLE JOINTS.
4. ALTERNATES FOR UPPER SECTION OF MANHOLE:
   A-PRECAST REINFORCED CONCRETE WALLS 5" THICK, (TO BE APPROVED BY THE ENGINEER).
   B-CAST-IN-PLACE CONCRETE, 8" MIN. WALL THICKNESS.
5. INVERT COVERS SHALL BE PLACED OVER THE TOP OF PIPE IN ALL MANHOLES DURING CONSTRUCTION. 5/8" EXTERIOR PLYWOOD SHALL BE USED. SEE STANDARD PLAN NO. SS-3.
6. INSTALL ROMAG STYLE "LCT" MANHOLE ADAPTER GASKET WHEN CONNECTING PLASTIC PIPES TO MANHOLES.
7. IN STREETS, ROADWAYS & OTHER PAVED AREAS, CONSTRUCT CAST-IN-PLACE RISER/COLLAR WITH THERMOPLASTIC FORM BY WHIRLYGIG. IN UNIMPROVED AREAS, USE STEEL RISERS TO MATCH GRADE.
8. INSTALL 2' STABILIZATION MATERIAL UNDER PRECAST BASES
9. ONLY ONE INSIDE DROP ALLOWED PER MANHOLE.
10. MATCH THE 0.8 DIAMETER POINTS OF THE PIPES.
11. IF THE DROP IS MORE THAN 18", THE RISER SHALL BE ANCHORED TO THE WALL EVERY 12". ANCHORS SHALL BE STAINLESS STEEL AND SHALL BE APPROVED PRIOR TO USE.
12. ALL STUBS FROM MANHOLES FOR FUTURE EXTENSIONS SHALL CONSIST OF 2' STUBS OF PLAIN END PIPE, WITH THAT PIPE TO BE REMOVED AND REPLACED WITH A FULL LENGTH PIPE AT THE TIME THE LINE IS EXTENDED. INSTALL PLUGS IN ALL FUTURE STUBS.

SEWER NOTES

1. All sewer installation shall conform to the requirements of the South Davis Sewer District (SDSD). Contact the Distict to arrange for inspection of all work. They can be reached at 295-3469.

2. All sewer mains shall be SDR 35 polyvinyl chloride (PVC) pipe meeting the requirements of ASTM D3034. The pipes shall have integral bells with rubber gaskets. The rubber gaskets shall conform to ASTM F477.

3. Install all pipe to the line and grade shown on the construction drawings. All sewer grades shall be verified at each manhole, and any discrepancies corrected before the next section of piping is installed.

4. All pipe shall be installed on a foundation consisting of a minimum of one-foot of sewer rock placed over undisturbed native material. Pipe zone material shall be placed to a level one-foot above the pipe.

5. All manholes shall be of the size and dimensions shown on the drawings. All manhole joints shall be gasketed or sealed to prevent the inflow of groundwater. All manholes shall be tested after installation. The cone section of the manhole shall be installed to within 1' of design finish grade. Bring manhole to asphalt grade by constructing cast-in-place riser/collar with thermoplastic form by Whirlygig.

6. Laterals shall be placed at each lot as shown on the construction drawings. The lateral is to be installed at 2% grade, and shall extend into the lot a minimum of 20 feet. Mark the end of all laterals with a 2" x 4" marker post that extends from the lateral to a minimum of 2 feet above the existing ground elevation. Place a water tight plug in the end of each lateral. All lateral locations shall be accurately recorded on a set of drawings, providing a distance from the nearest manhole, and a distance from a lot line. These record drawings shall be submitted to the Owner prior to final payment for sewer work.

7. Any dewatering costs shall be included in the unit prices submitted to the Owner.

8. Material excavated from the sewer trenches shall be placed at locations directed by the Owner or his representative. Excavated material shall be placed in thin lifts to facilitate drying.

9. All trenches shall be backfilled with select granular materials meeting the gradation shown on the construction drawings. All backfill shall be placed in lifts not exceeding 9", and compacted to a minimum of 95% of maximum density as determined by ASTM D1557.

10. Test all main lines and manholes per SDSD requirements. Report all testing information to both SDSD and Owner.

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No. 5150191-2202
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9/30/13
STATE OF UTAH

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C	JJS	07/11/13	CITY REVIEW
B	JJS	07/02/13	CITY REVIEW
A	JJS	06/13/13	SEWER/CITY REVIEW

SKY PROPERTIES

EAGLEPOINTE

SANITARY SEWER DETAILS

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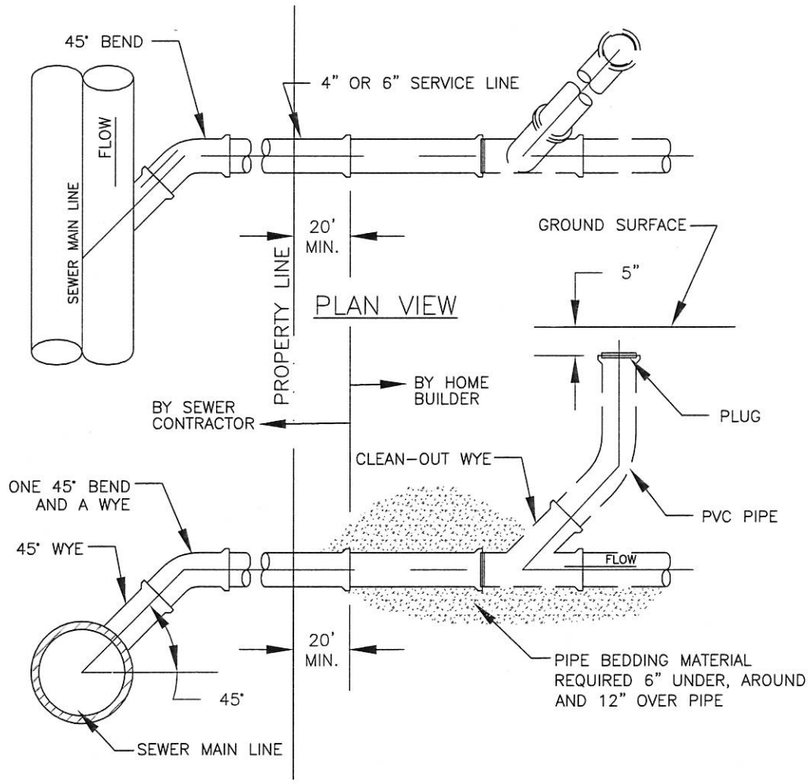


PROFILE

NOTES:

1. ALL SERVICES SHALL BE 4" DIA. MINIMUM, UNLESS DIRECTED OTHERWISE AND SHALL BE EXTENDED FROM MAIN LINES TO 20' INSIDE OF PROPERTY LINES.

2. MINIMUM GRADE SHALL BE 1% FOR 6" SERVICE LINES AND 2% FOR 4" SERVICE LINE MINIMUM GRADE OF 1% CAN BE USED FOR 4" SERVICE LINES WHERE REQUIRED AND AS APPROVED BY THE DISTRICT.

3. CLEAN-OUTS SHALL BE INSTALLED EVERY 100 FEET, AND AT ALL CHANGES IN DIRECTION OR GRADE.

4. ALL 90° CONNECTIONS TO MAIN MUST BE CONSTRUCTED WITH ONE 45° BEND AND A WYE.

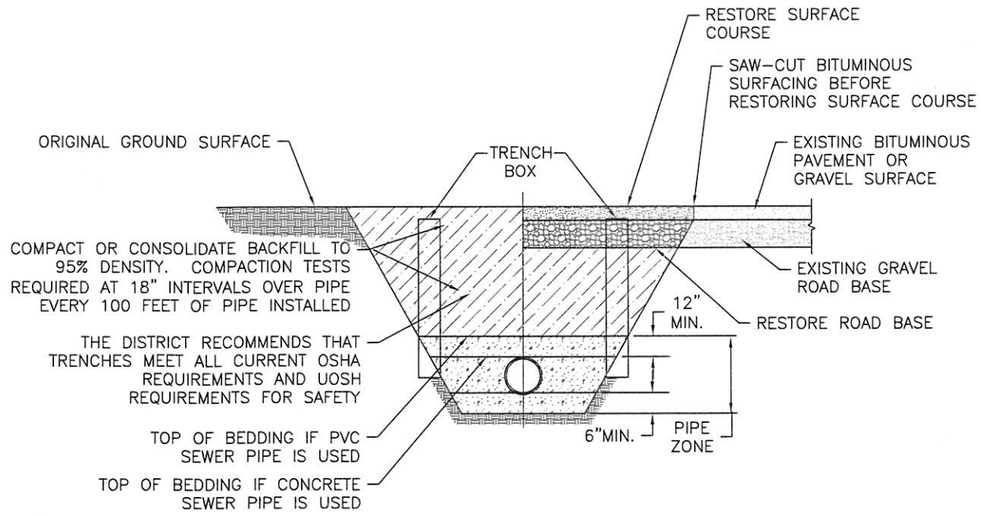
5. DIRECT NOSE-ON CONNECTIONS ARE USED WHEN CONNECTING TO EXISTING MAIN LINE. ALL NOSE-ON WORK IS TO BE DONE BY DISTRICT PERSONNEL.

6. NO BENDS ARE ALLOWED BETWEEN MAIN LINE AND THE END OF LATERAL 20' BEYOND PROPERTY LINE.

7. A 2' MINIMUM LENGTH OF STRAIGHT PIPE SHALL BE INSTALLED BETWEEN ANY TWO BENDS.

8. OPPOSING LATERALS REQUIRE COMBINATION WYE.

A — STANDARD SEWER SERVICE CONNECTION AND CLEANOUT



RECOMMENDED TRENCH QUANTITIES

PIPE DIAMETER INCHES	PIPE DIAMETER mm	RECOMMENDED MAXIMUM TRENCH WIDTH FOR FILL IN PIPE ZONE INCHES	RECOMMENDED MAXIMUM TRENCH WIDTH FOR FILL IN PIPE ZONE mm	RECOMMENDED MAXIMUM WIDTH FOR FILL & SURFACING ABOVE PIPE ZONE MEASURED AT TOP OF TRENCH CENTERED ON PIPE INCHES	RECOMMENDED MAXIMUM WIDTH FOR FILL & SURFACING ABOVE PIPE ZONE MEASURED AT TOP OF TRENCH CENTERED ON PIPE mm
4	101.6	72	1828.8	96	2438.4
6	152.4	72	1828.8	96	2438.4
8	203.2	72	1828.8	96	2438.4
10	254.0	72	1828.8	96	2438.4
12	304.8	72	1828.8	96	2438.4
15	381.0	72	1828.8	96	2438.4
18	457.2	72	1828.8	96	2438.4
21	533.4	72	1828.8	96	2438.4
24	609.6	72	1828.8	96	2438.4
30	762.0	84	2133.6	108	2743.2
36	914.4	84	2133.6	108	2743.2
42	1066.8	96	2438.4	120	3048.0
48	1219.2	96	2438.4	120	3048.0
54	1371.6	108	2743.2	132	3352.8
60	1524.0	120	3048.0	144	3657.6

NOTES:

1. THE DISTRICT RECOMMENDS CONTRACTOR MEET ALL OF THE REQUIREMENTS ESTABLISHED FOR SAFE TRENCHING. (SEE OSHA AND UOSH REQUIREMENTS, LATEST EDITIONS).

2. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE LAYING PIPE WITHIN 50' OF SAID UTILITIES WHICH MAY BE EXPOSED, DAMAGED OR CROSSED AS SHOWN ON THE DRAWINGS OR AS "BLUE STAKED". THE CONTRACTOR WILL MAKE ARRANGEMENTS WITH THE UTILITY COMPANY TO MOVE THE UTILITY IF NECESSARY OR OBTAIN PERMISSION FROM THE DISTRICT ENGINEER TO MODIFY GRADE OF PIPELINE IN ORDER TO GO AROUND UTILITIES.

3. TESTING: ALL NEW SANITARY SEWERS TO BE "TELEVISED" AND NECESSARY REPAIRS MADE BEFORE ACCEPTANCE. ALL LINES SHALL BE PRESSURE TESTED TO 3.5 psi MIN. FOR 5 MINUTES. A MANDREL OR BALL CAN BE USED TO VERIFY DEFORMATION OF A PIPE AS DETERMINED FROM THE VIDEO UNLESS SPECIFIED OTHERWISE.

4. ALL SEWER LINES TO BE INSTALLED IN PUBLIC RIGHT-OF-WAY OR RECORDED SEWER EASEMENT UNLESS OTHERWISE APPROVED BY SOUTH DAVIS SEWER DISTRICT.

B — STANDARD SEWER TRENCH DETAIL

LICENSED PROFESSIONAL ENGINEER No. 5150191-2202 JEREMY J. SHAFFER 9/30/13 STATE OF UTAH

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SKY PROPERTIES

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SANITARY SEWER DETAILS

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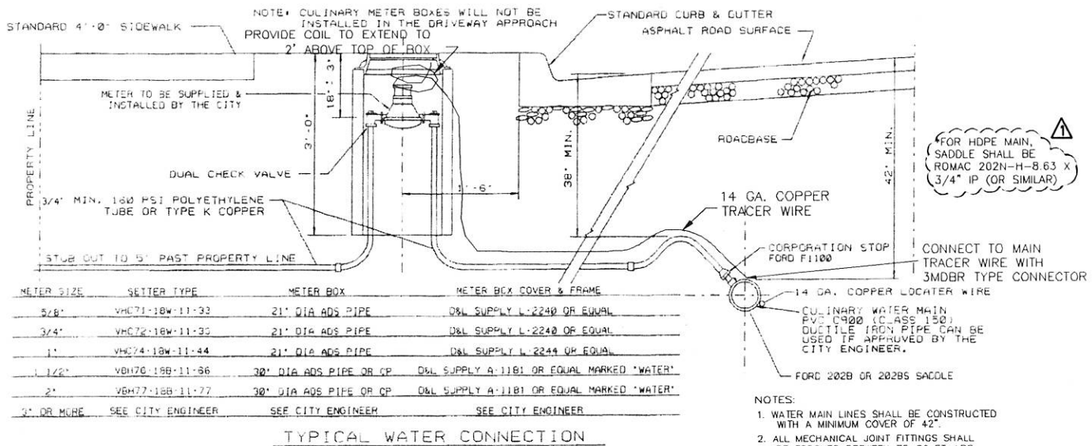
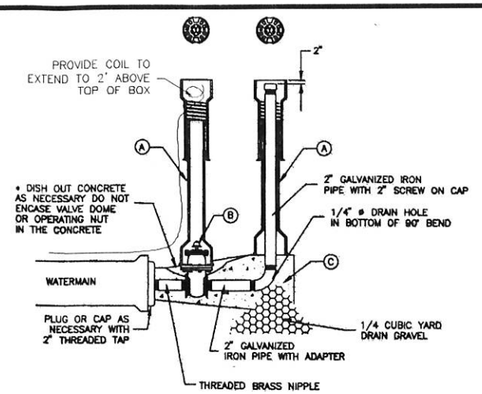


METER SIZE	SETTER TYPE	METER BOX	METER BOX COVER & FRAME
5/8"	VHC71-18W-11-33	21" DIA ADS PIPE	D&L SUPPLY L-2240 OR EQUAL
3/4"	VHC72-18W-11-33	21" DIA ADS PIPE	D&L SUPPLY L-2240 OR EQUAL
1"	VHC74-18W-11-44	21" DIA ADS PIPE	D&L SUPPLY L-2244 OR EQUAL
1 1/2"	VBM76-18B-11-66	30" DIA ADS PIPE OR CP	D&L SUPPLY A-1181 OR EQUAL MARKED "WATER"
2"	VBM77-18B-11-77	30" DIA ADS PIPE OR CP	D&L SUPPLY A-1181 OR EQUAL MARKED "WATER"
3" OR MORE	SEE CITY ENGINEER	SEE CITY ENGINEER	SEE CITY ENGINEER

NOTES:
1. WATER MAIN LINES SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 42".
2. ALL MECHANICAL JOINT FITTINGS SHALL BE TORQUED BETWEEN 75-90 FT. LBS.
3. ALL BEVELED EDGES SHALL BE CUT OFF BEFORE BEING CONNECTED TO A MECHANICAL JOINT FITTING.
4. ALL METER BOX LIDS SHALL HAVE A 2" DIA. TOUCH AND READ HOLE.
5. ALL POLYETHYLENE LATERALS MUST HAVE AN INSERT STIFFENER AT ALL CONNECTIONS.
6. TRACER WIRE TO BE INSTALLED FOR ALL WATER LINES CONNECTED TO THE SYSTEM OR IN CITY R.O.W.

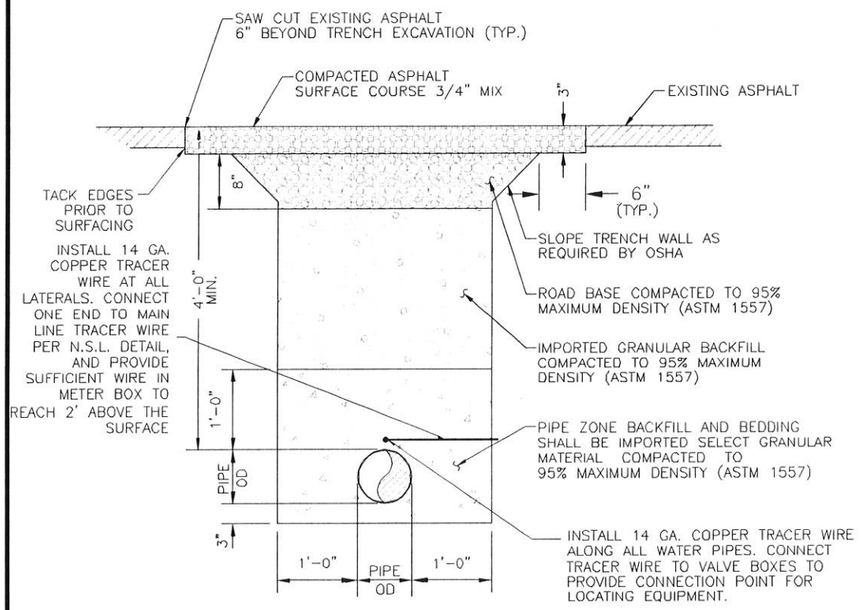
TYPICAL WATER CONNECTION

A — TYPICAL LATERAL CONNECTION
N.T.S.



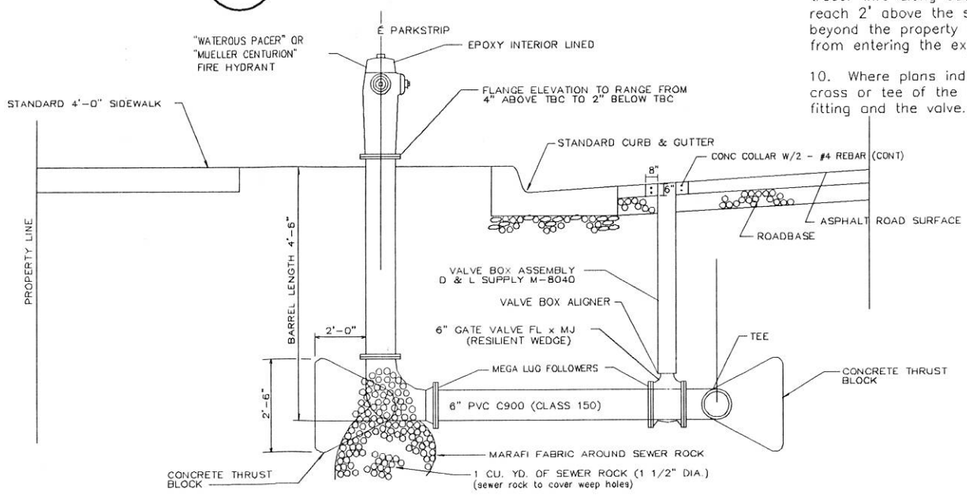
LEGEND		
No.	ITEM	DESCRIPTION
A	VALVE BOX WITH LID	2 PIECE CAST IRON
B	2" GATE VALVE WITH SCREW ENDS	2"x 2" OPERATING NUT
C	CONCRETE THRUST BLOCK	BASED ON 90°

D — 2" WASHOUT VALVE
N.T.S.



B — TRENCH DETAIL
N.T.S.

C — TYPICAL FIRE HYDRANT CONNECTION



WATER MASTER PLAN NOTES

1. All water mains, services, hydrants and appurtenant materials shall be constructed per the requirements of North Salt Lake. Notify North Salt Lake Public Works prior to commencement of any work to allow them to inspect all phases of the work.

2. All culinary water mains shall be manufactured of polyvinyl chloride (PVC), and shall meet the requirements of AWWA C-900. The Dimension Ratio (DR) of the pipe shall be 18. Deflect joints no more than the deflection recommended by the pipe and joint manufacturer. A 14 ga. tracer wire shall be installed along all water mains and individual laterals. The tracer wire shall be connected and brought to 2' above the surface at each valve and meter box.

3. All valves 10" and under shall be gate style valves meeting the requirements of AWWA C-509 (resilient wedge gate valves). All valves 12" and larger shall be butterfly valves meeting the requirements of AWWA C-504. All valves shall be designed for direct bury applications, shall have a 2" square operating nut, and shall be furnished with a two piece, cast iron, slip type valve box, with the lid marked WATER. All valves shall be wrapped in 8-mil polyethylene plastic, and all bolts shall be coated with FM grease. The tracer wire loops shall be brought to the surface at each valve box. Provide a terminal secured to the valve box for the tracer wire. Firmly attach the terminal to the valve box within 6" of the top of the valve box. Provide excess wire to facilitate future adjustments of valve box. Wire and terminal shall not restrict operation of the valve.

4. All fittings shall be cast iron fittings meeting the requirements of AWWA C-110 and C-111, and shall be either flanged or mechanical joint coupled. Install all fittings to manufacturer's recommendations. Coat all bolts with FM Grease, and wrap all fittings with 8-mil polyethylene.

5. Concrete thrust blocks and mechanical restraint devices (mega lug style) shall be used at all valves, fittings and changes in pipe direction. Thrust blocks shall be sized to accommodate the anticipated thrust, and to distribute the thrust to the soil at a pressure acceptable to the soil parameters. See the thrust block details included in the construction drawings, detail 'A', sheet D7.

6. All water mains shall be buried with a minimum cover of 42".

7. All water mains shall be pressure tested to 200% of operating pressure, and maintained for a minimum of 2-hours. All pressure testing shall be in accordance with North Salt Lake procedures. Schedule all testing in advance with North Salt Lake personnel so they can witness the testing.

8. All water mains shall be disinfected with a chlorinated slurry. A residual chlorine concentration of 25 ppm shall exist at the end of the 24-hour contact period. After 24-hour minimum contact period, flush all chlorine from the lines. Do not discharge chlorinated water into natural waterways or storm drains. Collect bacteria samples after all flushing is completed. All chlorine and bacteria testing shall be in accordance with North Salt Lake procedures. Schedule all testing in advance with North Salt Lake personnel so they can collect the samples and perform the testing.

9. All fire hydrants shall be Mueller Centurian, with a 4 ½" pumper nozzle and 2 – 2 ½" hose connections. A guard valve shall be installed with each hydrant. The guard valve shall be located at the tee off of the main. Bury hydrant to proper bury depth indicated on the hydrant. Rotate hydrant so that pumper nozzle faces the street. Provide a gravel sump adjacent to the barrel drain. Wrap barrel and guard valve in 8-mil polyethylene plastic, and all bolts shall be coated with FM grease, see detail this sheet.

9. All service taps shall be made using an all bronze, double-strap service saddle (Ford 202B or approved equal). Provide a corporation stop (Ford F1100 or approved equal), 3/4" CTS PE tubing, requisite fittings (including stainless steel pipe inserts), a Ford VHC72-18W-11-33 meter setter with State approved dual check valves and locking wings, a 21" diameter meter box with cast iron meter box lid and frame. Install 14 ga. copper tracer wire along each lateral per N.S.L. standards. Provide sufficient wire in meter box to reach 2' above the surface. Extend tubing from meter setter to a point at least 10 feet beyond the property line. Bend over end of tubing, and wrap with tape to prevent debris from entering the exposed tubing.

10. Where plans indicate non-typical crass and tee configurations. The intent is to use a crass or tee of the largest diameter shown, with appropriate reducers installed between the fitting and the valve. Use flanged fittings.

Rev.	By	Date	Remarks
1	JJS	02/17/15	HDPE NOTE
C	JJS	07/11/13	CITY REVIEW
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SKY PROPERTIES

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CULINARY WATER DETAILS

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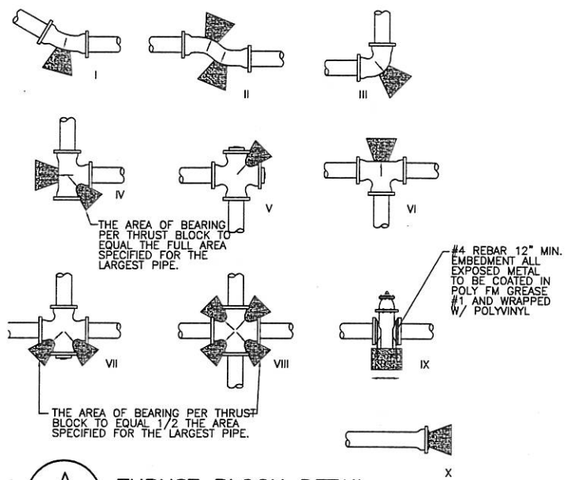
THRUST BLOCK NOTES

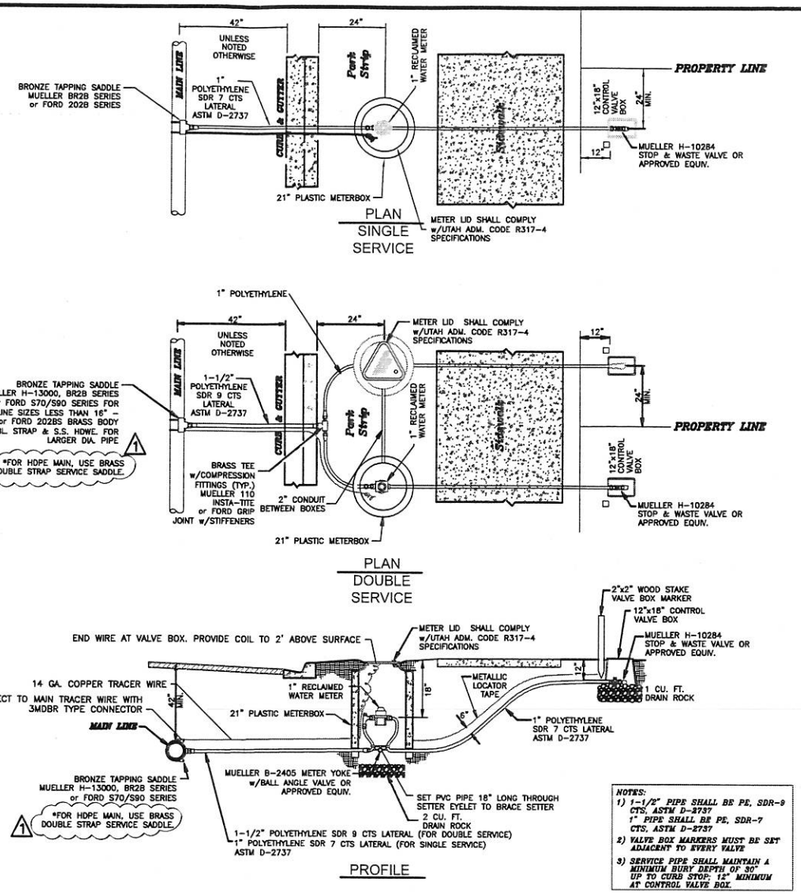
1. NORTH SALT LAKE REQUIRES ALL THRUST BLOCKS TO INCORPORATE BOTH CONCRETE THRUST BLOCKS AND THRUST RESTRAINING FOLLOWER RINGS (MEGA-LUG).
2. THRUST BLOCKS ARE REQUIRED AT ALL BENDS, TEES, CROSSES, AND REDUCERS. CONCRETE USED FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND SHALL BE CAST AGAINST UNDISTURBED SOILS.
3. THRUST BLOCKS SHALL BE ALLOWED TO CURE FOR 5 DAYS PRIOR TO PRESSURE TESTING THE PIPE.
4. THRUST BLOCKS SHALL BE ACCEPTED BY THE ENGINEER OR AUTHORIZED AGENT BEFORE BACKFILLING.
5. BEARING AREAS FOR THRUST BLOCKS SHALL BE AS SHOWN IN THE TABLE. CONFIGURATIONS NOT SHOWN SHALL REQUIRE SPECIAL DESIGN.

MINIMUM THRUST BLOCK BEARING AREA IN SQUARE FEET										
PIPE SIZE	CONDITION									
	I	II	III	IV	V	VI	VII	VIII	IX	X
4"	2.6	1.3	3.3	2.0	3.3	2.6	1.3	1.3	1.3	2.6
6"	3.9	2.0	6.5	3.3	6.5	4.6	2.6	2.6	2.6	4.6
8"	5.9	3.3	11.0	5.9	11.0	7.8	3.9	3.9	3.9	7.8
10"	9.8	5.2	17.5	9.1	17.5	12.4	6.5	6.5	6.5	12.4
12"	13.6	7.8	24.8	12.3	24.8	17.5	9.1	9.1	9.1	17.5
14"	18.2	9.7	33.6	16.9	33.6	24.0	12.3	12.3	12.3	24.0
16"	23.8	12.7	44.0	23.2	44.0	31.1	15.5	15.5	15.5	31.1

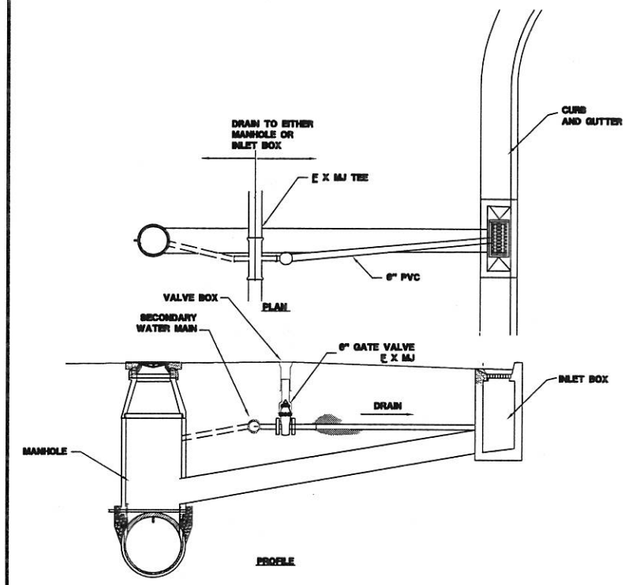


A — THRUST BLOCK DETAIL

N.T.S.

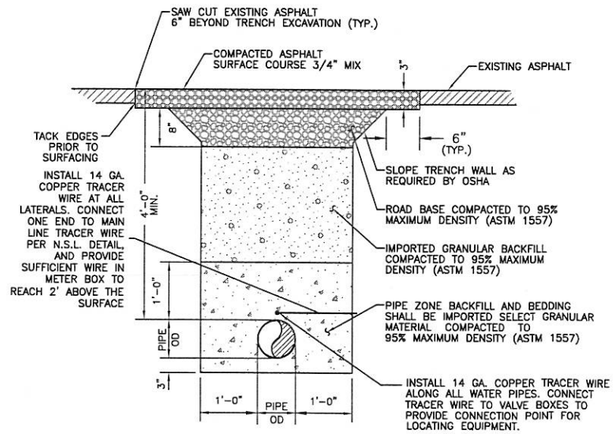


C — SECONDARY WATER SERVICE LATERAL

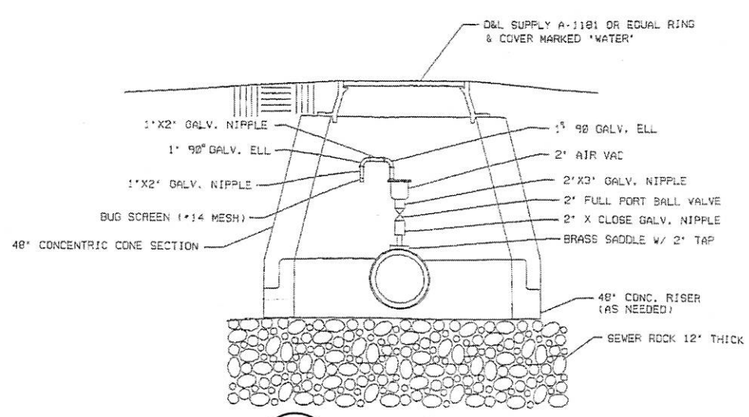


D — SECONDARY WATER MAIN DRAIN DETAIL

NTS



B — TRENCH DETAIL



E — AIR VAC

NSL STD. DETAIL

SECONDARY WATER MASTER PLAN NOTES

1. All secondary water mains, services, meter boxes and appurtenant materials shall be constructed per the requirements of North Salt Lake, with exceptions as noted below. Notify North Salt Lake Public Works prior to commencement of any work to allow them to inspect all phases of the work.

2. All secondary water mains shall be manufactured of polyvinyl chloride (PVC), and shall meet the requirements of AWWA C-900. All secondary water mains shall be purple in color. The Dimension Ratio (DR) of the pipe shall be 18. Deflect joints no more than the deflection recommended by the pipe and joint manufacturer. Minimum pipe size shall be 6". A 14 ga. Tracer wire shall be installed along all water mains and individual laterals. The tracer wire shall be connected and brought to 2' above the surface at each valve and meter box.

3. All valves 10" and under shall be gate style valves meeting the requirements of AWWA C-509 (resilient wedge gate valves). All valves 12" and larger shall be butterfly valves meeting the requirements of AWWA C-504. All valves shall be designed for direct bury applications, shall have a 2" square operating nut, and shall be furnished with a two piece, cast iron, slip type valve box, with the lid marked IRRIGATION. All valves shall be wrapped in 8-mil polyethylene plastic, and all bolts shall be coated with FM grease. The tracer wire loops shall be brought to the surface at each valve box. Provide a terminal secured to the valve box for the tracer wire. Firmly attach the terminal to the valve box within 6" of the top of the valve box. Provide excess wire to facilitate future adjustments of valve box. Wire and terminal shall not restrict operation of the valve.

4. All fittings shall be cast iron fittings meeting the requirements of AWWA C-110 and C-111, and shall be either flanged or mechanical joint coupled. Install all fittings to manufacturer's recommendations. Coat all bolts with FM Grease, and wrap all fittings with 8-mil polyethylene.

5. Concrete thrust blocks and mechanical restraint devices (megalug style) shall be used at all valves, fittings and changes in pipe direction. Thrust blocks shall be sized to accommodate the anticipated thrust, and to distribute the thrust to the soil at a pressure acceptable to the soil parameters. See the thrust block details included this sheet.

6. All secondary water mains shall be buried with a minimum cover of 30".

7. All secondary water mains shall be pressure tested to 200 psi, and maintained for a minimum of 2-hours. All pressure testing shall be in accordance with North Salt Lake procedures. Schedule all testing in advance with North Salt Lake personnel so they can witness the testing.

8. All service taps shall be made using an all bronze, double-strap service saddle (Ford 202B or approved equal), with 1-1/2" or 1" CTS PE tubing, a Mueller 'Mark II Oriseal' (H-10284) curb valve with drain, curb box (Mueller H-10306-42) and all requisite fittings. Install 14 ga. copper tracer wire from main to meter box (provide coil to extend 2' above box) per N.S.L. standards. Extend 1" schedule 40 PVC a minimum of 20 feet beyond curb box. Mark end of PVC with 2" x 4" post.

9. All fittings shall be brass, and shall be installed using teflon tape or other lubricating material.

10. All HDPE tubing used shall be purple in color, and shall be copper tube size (CTS).

11. All valve boxes shall be marked "IRRIGATION".

12. Secondary water mains crossing culinary water mains shall be installed a minimum of 18" below the culinary main.

LICENSED PROFESSIONAL ENGINEER No. 5151011-2202 JEREMY J. SHAFFER 2/17/15 STATE OF UTAH

Rev.	By	Date	Remarks
1	JJS	02/17/15	HDPE NOTE
0	JJS	09/30/13	ISSUED FOR CONSTRUCTION
C	JJS	07/11/13	CITY REVIEW
B	JJS	07/02/13	CITY REVIEW

SKY PROPERTIES

EAGLEPOINTE

SECONDARY WATER DETAILS

BINGHAM ENGINEERING
SALT LAKE CITY - (801) 532-2520
OGDEN - (801) 399-1662

Dsn: JRL Drw: STAF Chk: JRL Rvw: JRL

Sht D7 of

Print Date: 02/17/2015 Created: 10/18/12 Proj # 5101

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