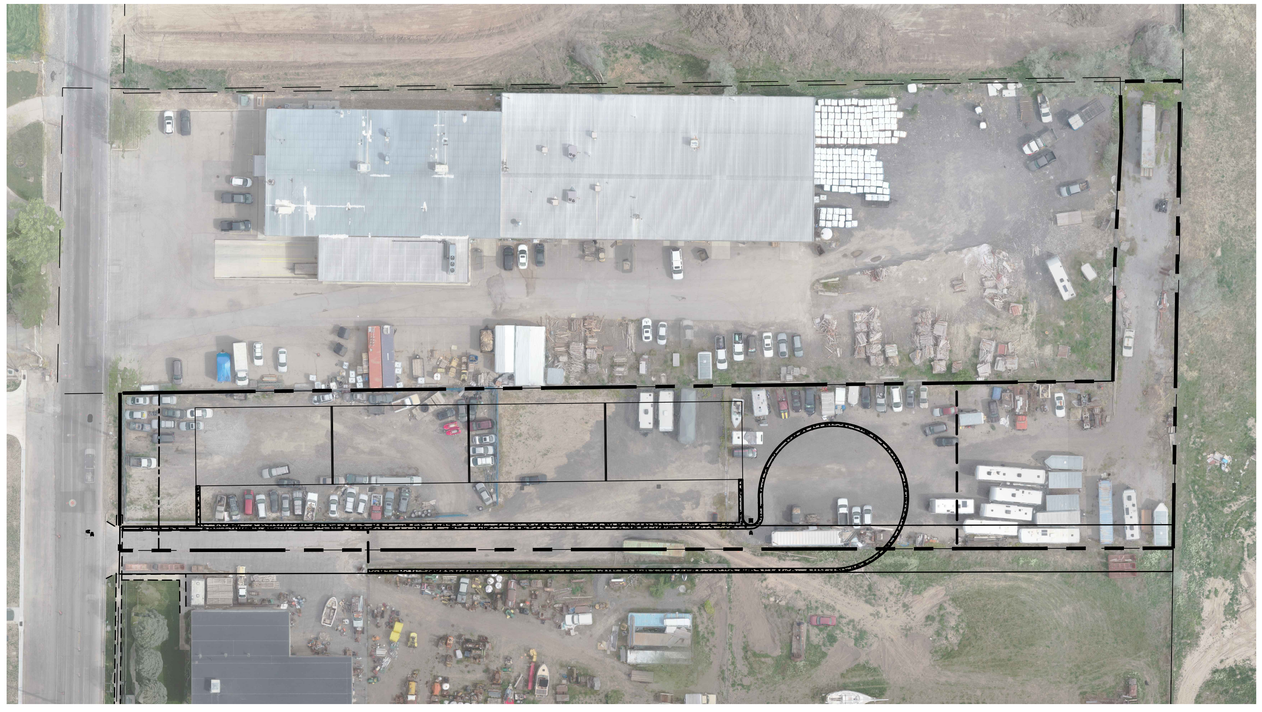
VICINITY MAP

BLACK ICE

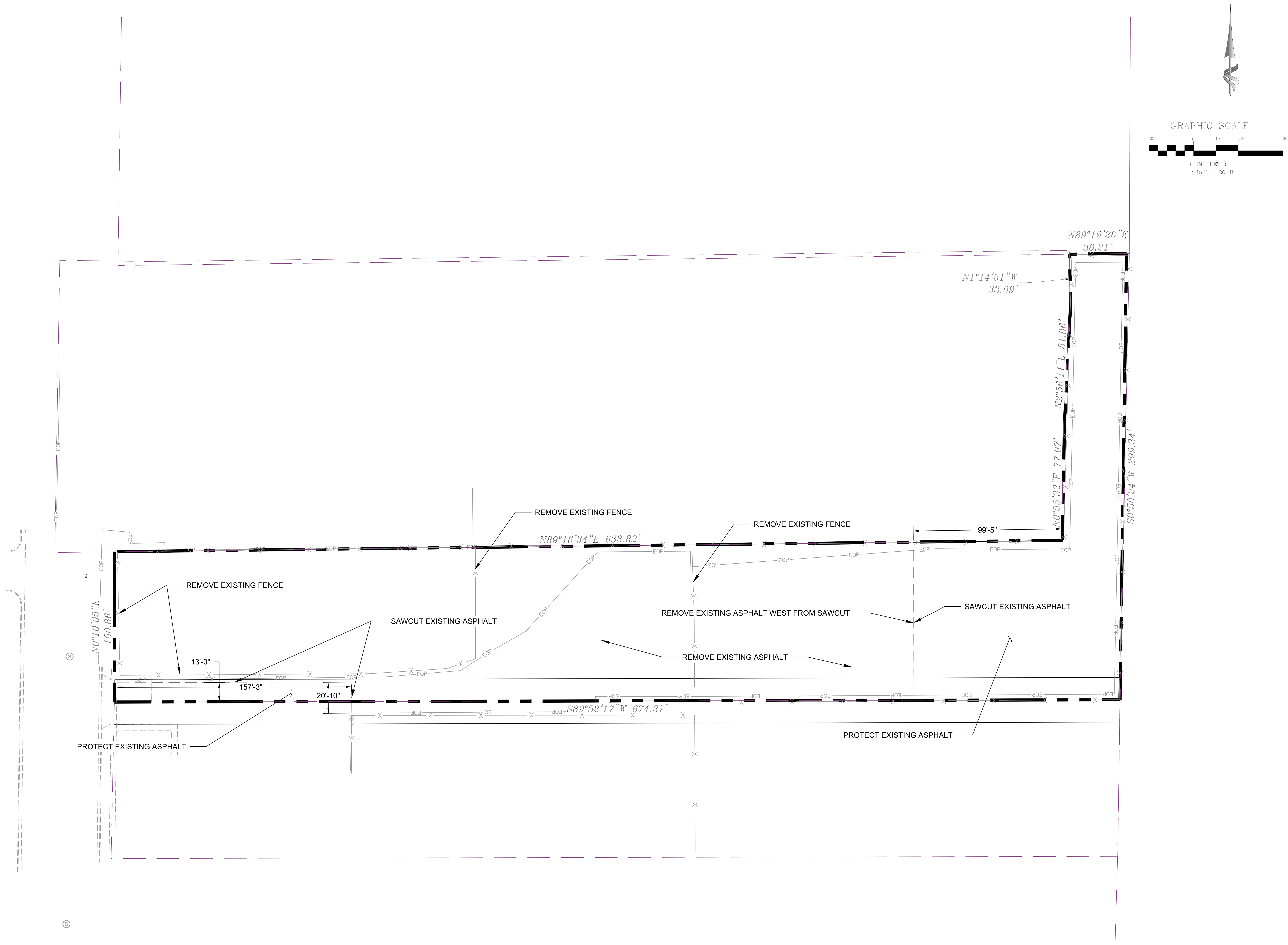
1400 N 300 W
SPANISH FORK, UT

C1.0	DEMOLITION PLAN
C2.0	OVERALL SITE PLAN
C3.0	SITE PLAN
C4.0	UTILITY PLAN
C5.0	GRADING PLAN
C6.0	EROSION CONTROL
C7.0	EROSION CONT DETALS
D1.0	DETAILS
D2.0	DETAILS



epic ENGINEERING

S:\Projects\24045556 Black Ice Spanish Fork\Drawings\DWG\Sheets\Cover.dwg



S:\Projects\Black Ice Spanish Fork\Drawings\DWG\Xref\Black Ice_Base New.dwg

CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT #
24SM5586

SCALES

HORIZ: 1" = 30'
VERT:
(24" x 36" SHEET)

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET.

PROJECT NAME:

BLACK ICE

PROJECT LOCATION:

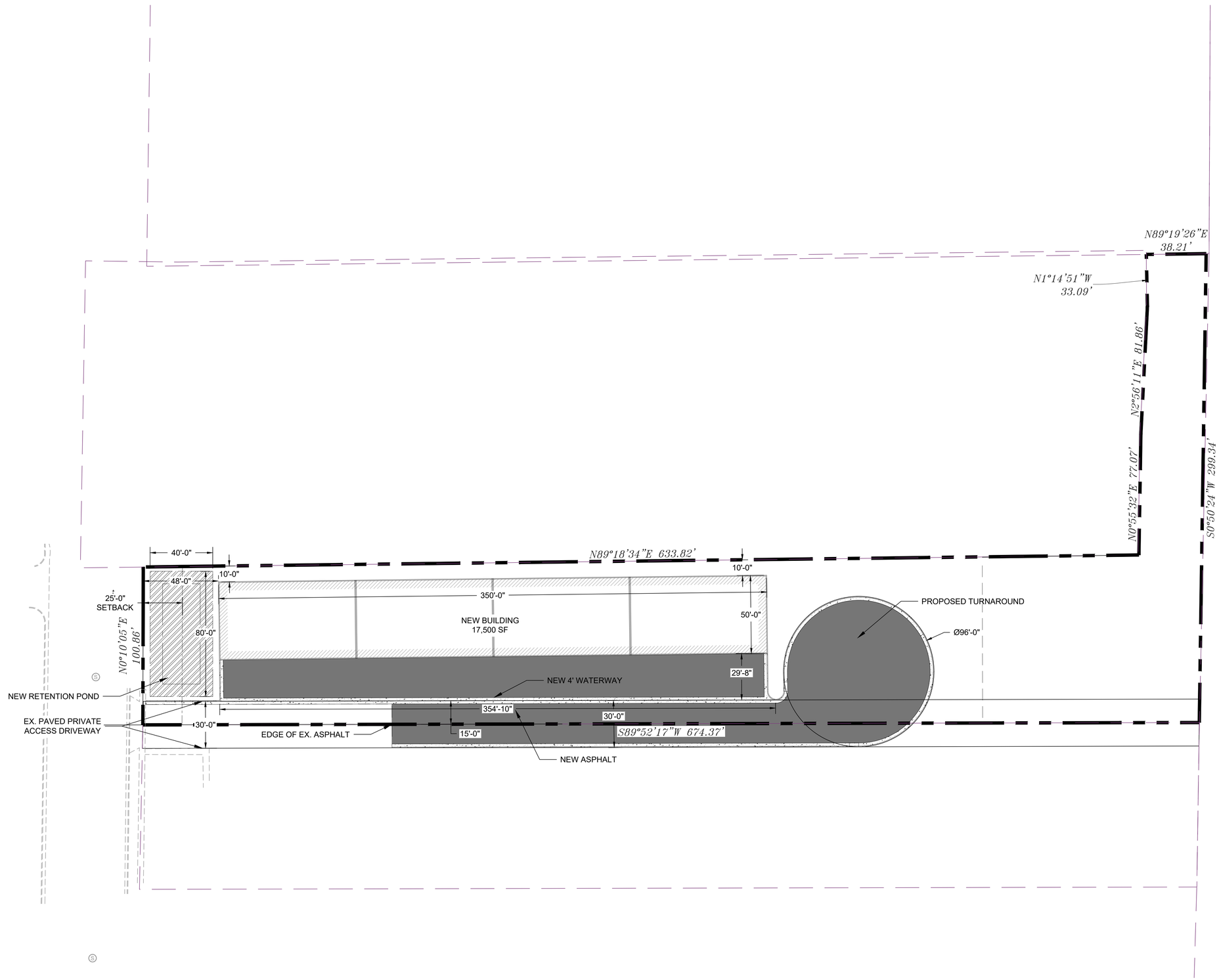
1400 N 300 W
SPANISH FORK, UTAH

SHEET TITLE:

DEMO PLAN

PLAN SET: **PRELIM**

SHEET **C1.0**



CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT #
24SM5586

SCALES

HORIZ: 1" = 30'
VERT:
(24" x 36" SHEET)

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET.

PROJECT NAME:

BLACK ICE

PROJECT LOCATION:

1400 N 300 W
SPANISH FORK, UTAH

SHEET TITLE:

OVERALL SITE PLAN

PLAN SET: PRELIM

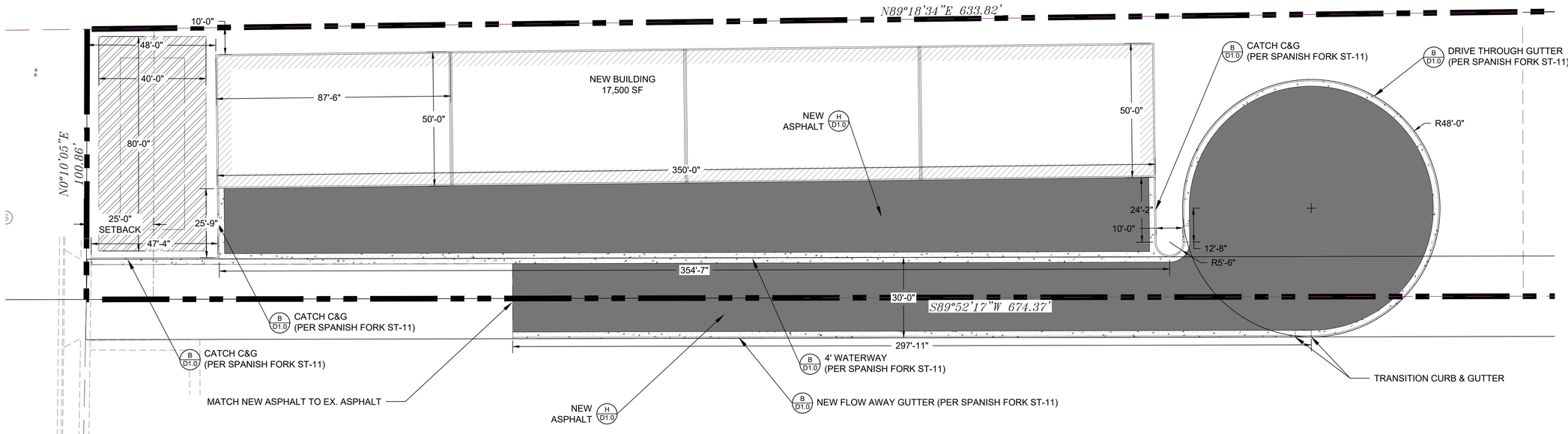
SHEET C2.0

S:\Projects\Black Ice Spanish Fork\Drawings\DWG\Xrref\Black Ice_Base New.dwg

GRAPHIC SCALE

20' 0' 10' 20' 40'

(IN FEET)
1 inch = 20 ft.



CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT #
24SM5586

SCALES

HORIZ: 1" = 20'
VERT:
(24" x 36" SHEET)

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST IF FOR A HALF SIZE SHEET.

PROJECT NAME:

BLACK ICE

PROJECT LOCATION:

1400 N 300 W
SPANISH FORK, UTAH

SHEET TITLE:

SITE PLAN

PLAN SET: PRELIM

SHEET C3.0

S:\Projects\Black Ice Spanish Fork\Drawings\DWG\Xrref\Black_Ice_Base New.dwg

GRAPHIC SCALE

30' 0' 15' 30' 60'

(IN FEET)
1 inch = 30' ft.

1" WATER METER (TYP.) A D1.0

1" WATER SERVICE (TYP.) A D1.0

EX. WATER VALVES

EX. SSHM
RIM: 4553.49
INV: 4543.69

NEW WATER VAVLE

NEW SSMH
RIM: 4553.50
INV: 4543.76
D D1.0

EX. 36" SEWER MAIN

EX. 16" WATER MAIN

EX. SSHM
RIM: 4554.42
INV: 4544.12

INV: 4546.49

FEE: 4550.00

INV: 4547.38

INV: 4548.63

E D1.0 NEW 4" SEWER LATERAL
@ 2.0% MIN SLOPE (TYP.)

INV: 4549.87

E D1.0 SEWER CLEAN OUT (TYP.)

C D1.0 NEW FIRE HYDRANT

C D1.0 NEW WATER VAVLE

10'-0"
TYP.

10'-0"

NEW 6" WATER LINE

4" INV: 4545.66
8" INV: 4544.99

4" INV: 4546.53
8" INV: 4545.87

8" SEWER MAIN
396 LF@ 1.0% SLOPE

4" INV: 4547.76
8" INV: 4547.10

4" INV: 4548.99
8" INV: 4548.33

D D1.0 NEW SSMH
RIM: 4553.75
INV: 4548.43

CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT #
24SM5586

SCALES

HORIZ: 1" = 30'
VERT:
(24" x 36" SHEET)

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET.

PROJECT NAME:

BLACK ICE

PROJECT LOCATION:

**1400 N 300 W
SPANISH FORK, UTAH**

SHEET TITLE:

UTILITY PLAN

PLAN SET: PRELIM

SHEET C4.0

S:\Projects\Block Ice Spanish Fork\Drawings\DWG\Xref\Block Ice_Base New.dwg

Project Name: Black Ice
Location: Spanish Fork UT

Design Return Period, Year	25
Storm Event, Hr	24

Description of Area	Runoff Coefficient	Sub-Area, sq ft
Roofs	0.95	17000
Asphalt & Concrete pavement	0.95	48203
Lawns on sandy soils (2 to 7% slope)	0.15	12557
None		
None		
Composite runoff coefficient	0.82	
Total Area, sq ft	77760	
Total Area, acre	1.7851	

Discharge Rate

Allowable Discharge Rate, cfs/acre	0.2
Max Discharge, cfs	0.357

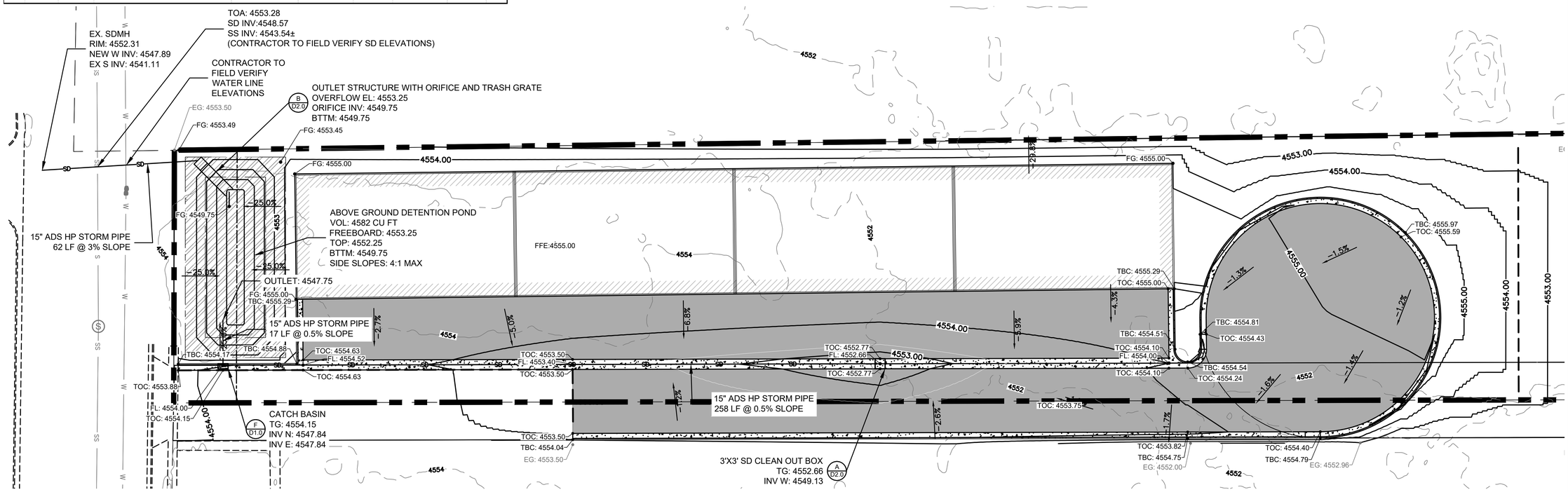
Storm Retention Basin Sizing Calculations: Rational Method

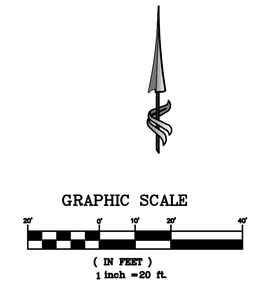
	Duration Hour	Intensity in/hr	Area Acre	C	Flow cfs	Volume in ft^3	Volume out ft^3	Detention ft^3
5	0.083	4.2	1.7851	0.82	6.15	1839	107	1732
10	0.17	3.19	1.7851	0.82	4.67	2861	218	2642
15	0.25	2.64	1.7851	0.82	3.87	3481	321	3160
30	0.5	1.78	1.7851	0.82	2.61	4695	643	4052
	1	1.1	1.7851	0.82	1.61	5802	1285	4517
	2	0.612	1.7851	0.82	0.90	6457	2571	3886
	3	0.432	1.7851	0.82	0.63	6836	3856	2980
	6	0.244	1.7851	0.82	0.36	7722	7712	11
	12	0.144	1.7851	0.82	0.21	9115	15424	-6308
	24	0.086	1.7851	0.82	0.13	10887	30847	-19960
	48	0.047	1.7851	0.82	0.07	11900	61694	-49794

Minimum Retention Volume, ft^3	**4517**
Provided Retention Volume, ft^3	**4582**

ORIFICE SIZING

Max Flow, Q	0.2	ft3/s
Coefficent of discharge	0.61	
Gravity	32.2	ft/s2
Max Height of water	3.5	ft
Area	0.022	ft^2
Required Diameter	2.00	**in**
	Use 2 in. Orifice	





CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT #
24SM5586

SCALES

HORIZ:
VERT:
(24" x 36" SHEET)

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET.

PROJECT NAME:
BLACK ICE

PROJECT LOCATION:
1400 N 300 W
SPANISH FORK, UTAH

SHEET TITLE:
GRADING PLAN

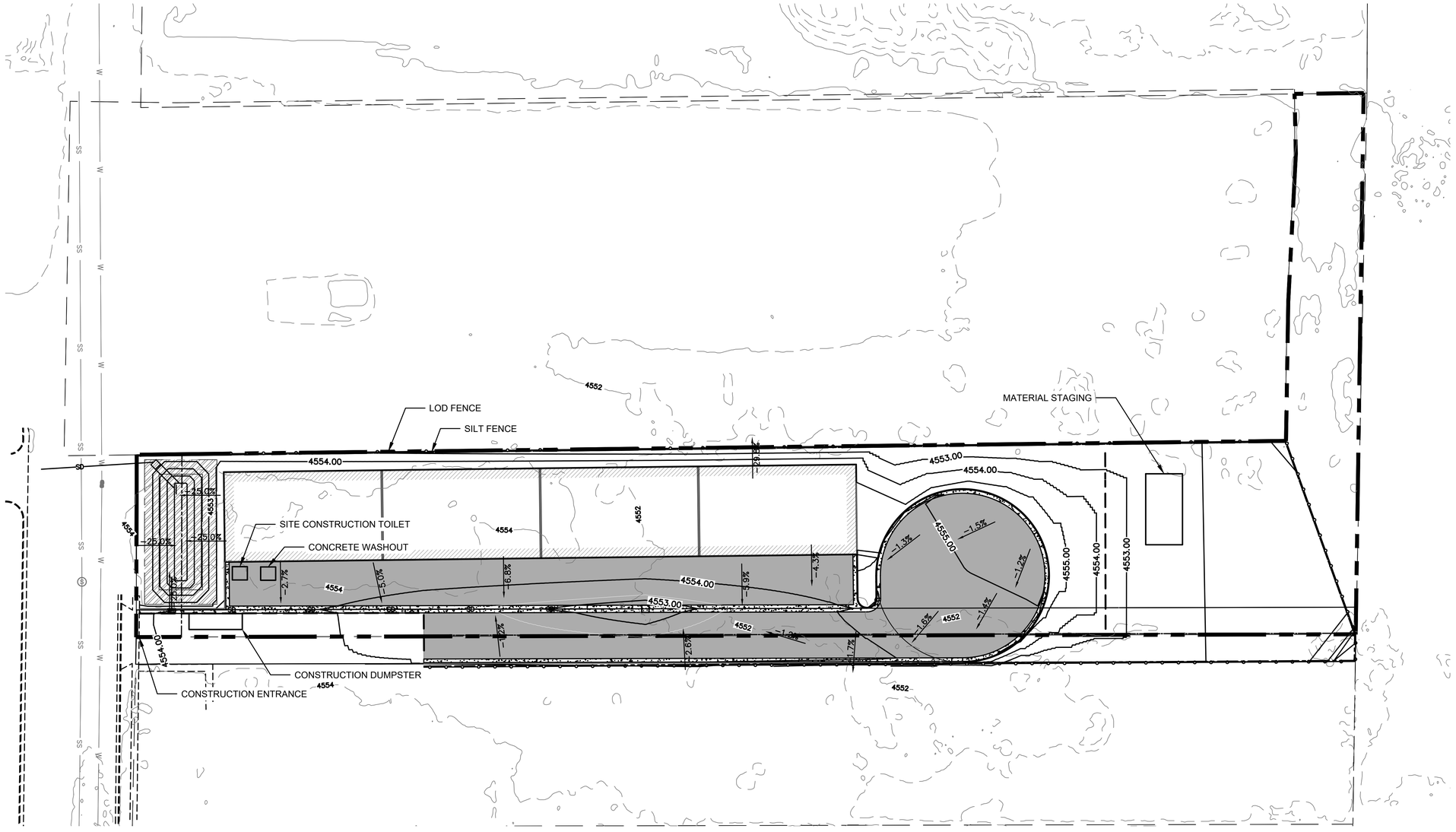
PLAN SET: PRELIM
SHEET C5.0

S:\Projects\24SM5586 Black Ice Spanish Fork\Drawings\DWG\Civil\Black Ice_Grading.dwg

GRAPHIC SCALE

30' 0' 15' 30' 60'

(IN FEET)
1 inch = 30 ft.



CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT # 24SM5586

SCALES

HORIZ:
VERT:
(24" x 36" SHEET)

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET.

PROJECT NAME:
BLACK ICE

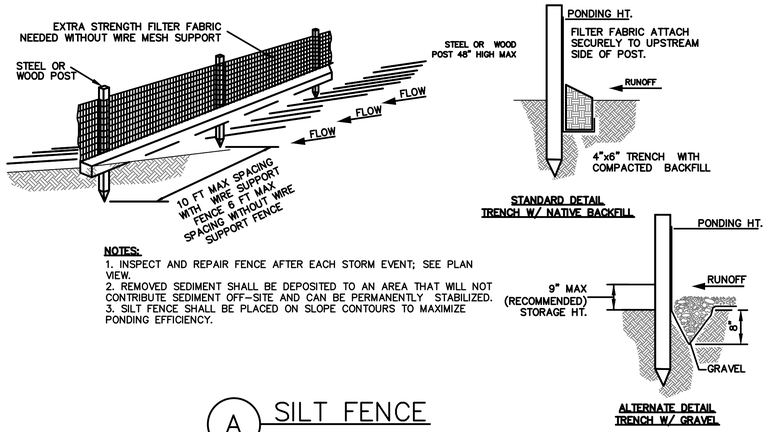
PROJECT LOCATION:
1400 N 300 W
SPANISH FORK, UTAH

SHEET TITLE:
EROSION CONTROL PLAN

PLAN SET: PRELIM

SHEET C6.0

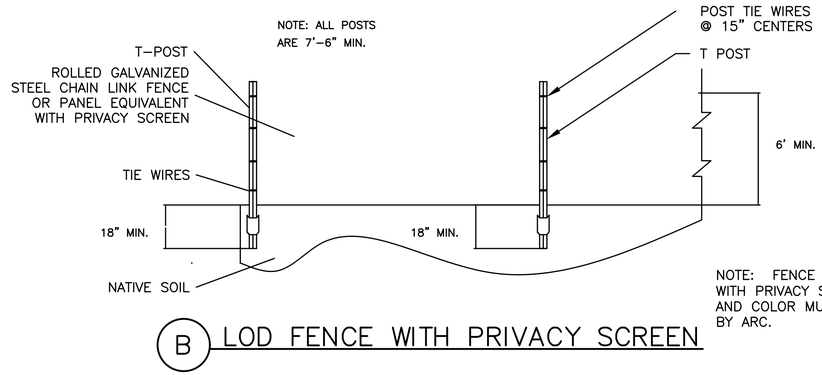
S:\Projects\24SM5586 Black Ice Spanish Fork\Drawings\SWPPP\Work\Black Ice_Grading.dwg



NOTES:

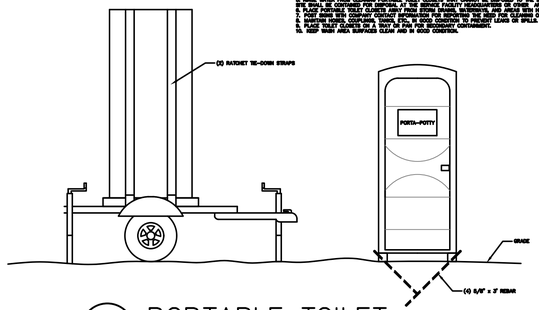
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT; SEE PLAN VIEW.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

A SILT FENCE

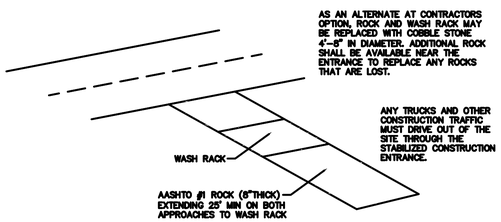


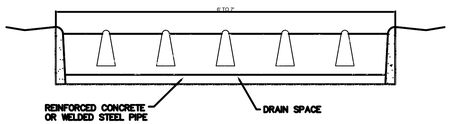
NOTE: FENCE MUST BE 6' MIN. WITH PRIVACY SCREEN, MATERIAL AND COLOR MUST BE APPROVED BY ARC.

B LOD FENCE WITH PRIVACY SCREEN



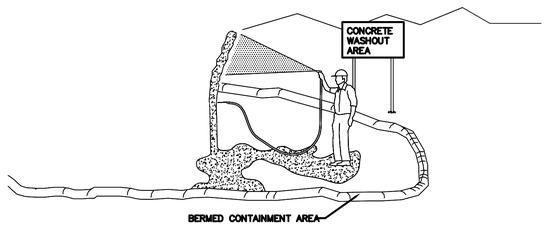
C PORTABLE TOILET





MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCK PILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIME. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. AT THE END OF EACH CONSTRUCTION DAY, ANY SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

D REINFORCED CONSTRUCTION ENTRANCE



NOTES:

EXCESS AND WASTE CONCRETE SHALL NOT BE WASHED INTO STREET OR INTO A DRAINAGE SYSTEM. FOR WASHOUT OF CONCRETE AND MORTAR PRODUCTS, A DESIGNATED CONTAINMENT FACILITY OF SUFFICIENT CAPACITY TO RETAIN LIQUID AND SOLID WASTE SHALL BE PROVIDED ON SITE.

E CONCRETE WASHOUT

CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT # 24SM5586

SCALES

HORIZ:
VERT:
(24" x 36" SHEET)

0 1"

BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET.

PROJECT NAME:

BLACK ICE

PROJECT LOCATION:

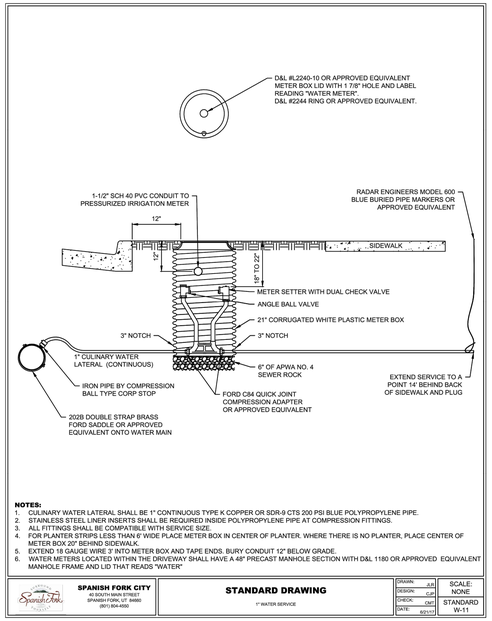
1400 N 300 W SPANISH FORK, UTAH

SHEET TITLE:

EROSION CONTROL DETAILS

PLAN SET:	SHEET
PRELIM	C7.0

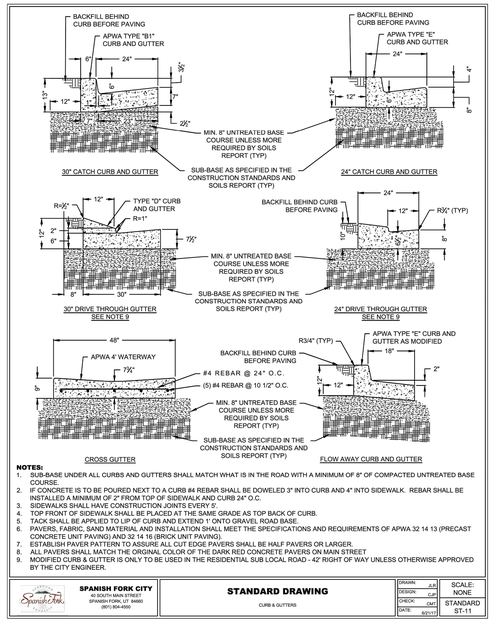
S:\Projects\24SM5586 Black Ice Spanish Fork\Drawings\Civil\Work\Black Ice_Grading.dwg



NOTES:
1. CULINARY WATER LATERAL SHALL BE 1" CONTINUOUS TYPE K COPPER OR SDR-9 CTS 200 PSI BLUE POLYPROPYLENE PIPE.
2. STAINLESS STEEL LINER INSERTS SHALL BE REQUIRED INSIDE POLYPROPYLENE PIPE AT COMPRESSION FITTINGS.
3. ALL FITTINGS SHALL BE COMPATIBLE WITH SERVICE SIZE.
4. FOR PLANTER STRIPS LESS THAN 6' WIDE PLACE METER BOX IN CENTER OF PLANTER. WHERE THERE IS NO PLANTER, PLACE CENTER OF METER BOX 20" BEHIND SIDEWALK.
5. EXTEND 18 GAUGE WIRE 3' INTO METER BOX AND TAPE ENDS. BURY CONDUIT 12" BELOW GRADE.
6. WATER METERS LOCATED WITHIN THE DRIVEWAY SHALL HAVE A 48" PRECAST MANHOLE SECTION WITH D&L 1180 OR APPROVED EQUIVALENT MANHOLE FRAME AND LID THAT READS "WATER"

SPANISH FORK CITY	STANDARD DRAWING		
40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	1" WATER SERVICE	DRAWN: JLR / DESIGN: CJP / CHECK: CMT / DATE: 6/21/17	SCALE: NONE / STANDARD W-11

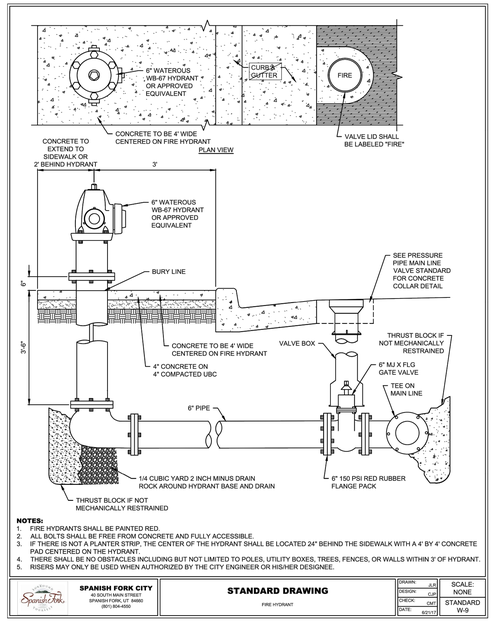
A WATER SERVICE



NOTES:
1. SUB-BASE UNDER ALL CURBS AND GUTTERS SHALL MATCH WHAT IS IN THE ROAD WITH A MINIMUM OF 8" OF COMPACTED UNTREATED BASE COURSE.
2. IF CONCRETE IS TO BE POURED NEXT TO A CURB #4 REBAR SHALL BE DOWELED 3" INTO CURB AND 4" INTO SIDEWALK. REBAR SHALL BE INSTALLED A MINIMUM OF 2" FROM TOP OF SIDEWALK AND CURB 24" O.C.
3. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS EVERY 5'.
4. TOP FRONT OF SIDEWALK SHALL BE PLACED AT THE SAME GRADE AS TOP BACK OF CURB.
5. TACK SHALL BE APPLIED TO LIP OF CURB AND EXTEND 1' ONTO GRAVEL ROAD BASE.
6. PAVERS, FABRIC, SAND MATERIAL AND INSTALLATION SHALL MEET THE SPECIFICATIONS AND REQUIREMENTS OF APWA 32 14 13 (PRECAST CONCRETE UNIT PAVING) AND 32 14 16 (BRICK UNIT PAVING).
7. ESTABLISH PAVER PATTERN TO ASSURE ALL CUT EDGE PAVERS SHALL BE HALF PAVERS OR LARGER.
8. ALL PAVERS SHALL MATCH THE ORIGINAL COLOR OF THE DARK RED CONCRETE PAVERS ON MAIN STREET
9. MODIFIED CURB & GUTTER IS ONLY TO BE USED IN THE RESIDENTIAL SUB LOCAL ROAD - 42' RIGHT OF WAY UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

SPANISH FORK CITY	STANDARD DRAWING		
40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	CURB & GUTTERS	DRAWN: JLR / DESIGN: CJP / CHECK: CMT / DATE: 6/21/17	SCALE: NONE / STANDARD ST-11

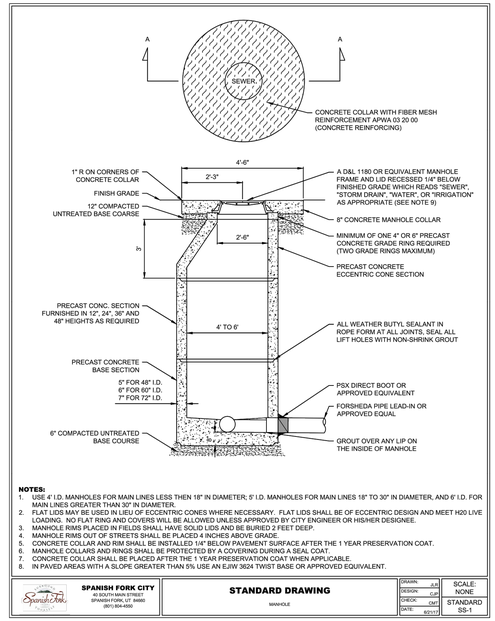
B CURB & GUTTER



NOTES:
1. FIRE HYDRANTS SHALL BE PAINTED RED.
2. ALL BOLTS SHALL BE FREE FROM CONCRETE AND FULLY ACCESSIBLE.
3. IF THERE IS NOT A PLANTER STRIP, THE CENTER OF THE HYDRANT SHALL BE LOCATED 24" BEHIND THE SIDEWALK WITH A 4' BY 4' CONCRETE PAD CENTERED ON THE HYDRANT.
4. THERE SHALL BE NO OBSTACLES INCLUDING BUT NOT LIMITED TO POLES, UTILITY BOXES, TREES, FENCES, OR WALLS WITHIN 3' OF HYDRANT.
5. RISERS MAY ONLY BE USED WHEN AUTHORIZED BY THE CITY ENGINEER OR HIS/HER DESIGNEE.

SPANISH FORK CITY	STANDARD DRAWING		
40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	FIRE HYDRANT	DRAWN: JLR / DESIGN: CJP / CHECK: CMT / DATE: 6/21/17	SCALE: NONE / STANDARD W-9

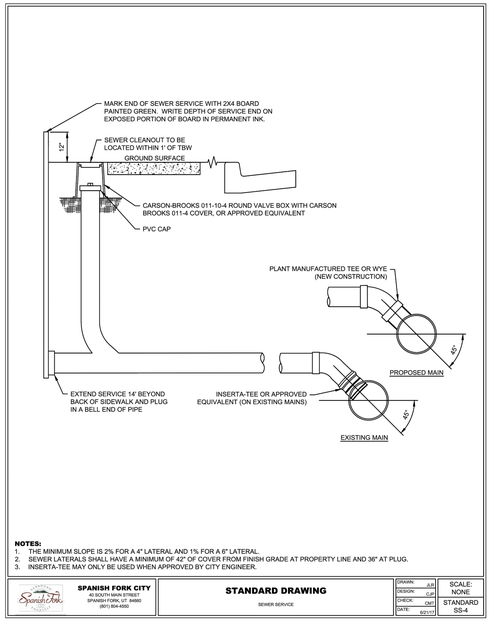
C FIRE HYDRANT



NOTES:
1. USE 4' I.D. MANHOLES FOR MAIN LINES LESS THEN 18" IN DIAMETER; 5' I.D. MANHOLES FOR MAIN LINES 18" TO 30" IN DIAMETER, AND 6' I.D. FOR MAIN LINES GREATER THAN 30" IN DIAMETER.
2. FLAT LIDS MAY BE USED IN LIEU OF ECCENTRIC CONES WHERE NECESSARY. FLAT LIDS SHALL BE OF ECCENTRIC DESIGN AND MEET H20 LIVE LOADING. NO FLAT RING AND COVERS WILL BE ALLOWED UNLESS APPROVED BY CITY ENGINEER OR HIS/HER DESIGNEE.
3. MANHOLE RIMS PLACED IN FIELDS SHALL HAVE SOLID LIDS AND BE BURIED 2 FEET DEEP.
4. MANHOLE RIMS OUT OF STREETS SHALL BE PLACED 4 INCHES ABOVE GRADE.
5. CONCRETE COLLAR AND RIM SHALL BE INSTALLED 1/4" BELOW PAVEMENT SURFACE AFTER THE 1 YEAR PRESERVATION COAT.
6. MANHOLE COLLARS AND RINGS SHALL BE PROTECTED BY A COVERING DURING A SEAL COAT.
7. CONCRETE COLLAR SHALL BE PLACED AFTER THE 1 YEAR PRESERVATION COAT WHEN APPLICABLE.
8. IN PAVED AREAS WITH A SLOPE GREATER THAN 5% USE AN EJIW 3624 TWIST BASE OR APPROVED EQUIVALENT.

SPANISH FORK CITY	STANDARD DRAWING		
40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4555	MANHOLE	DRAWN: JLR / DESIGN: CJP / CHECK: CMT / DATE: 6/21/17	SCALE: NONE / STANDARD SS-1

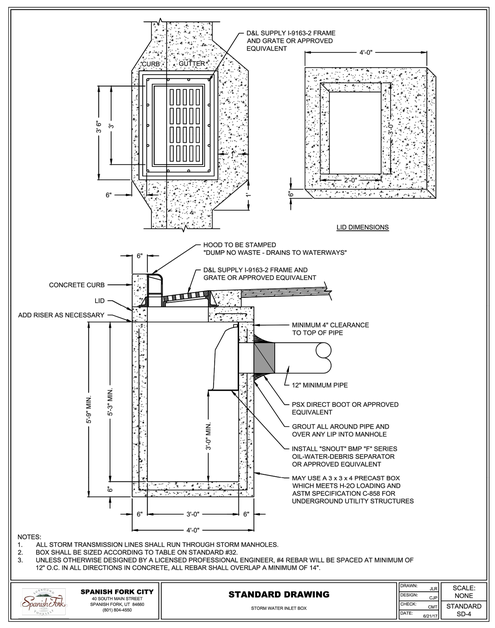
D SEWER MANHOLE



NOTES:
1. THE MINIMUM SLOPE IS 2% FOR A 4" LATERAL AND 1% FOR A 6" LATERAL.
2. SEWER LATERALS SHALL HAVE A MINIMUM OF 42" OF COVER FROM FINISH GRADE AT PROPERTY LINE AND 36" AT PLUG.
3. INSERTA-TEE MAY ONLY BE USED WHEN APPROVED BY CITY ENGINEER.

SPANISH FORK CITY	STANDARD DRAWING		
40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	SEWER SERVICE	DRAWN: JLR / DESIGN: CJP / CHECK: CMT / DATE: 6/21/17	SCALE: NONE / STANDARD SS-4

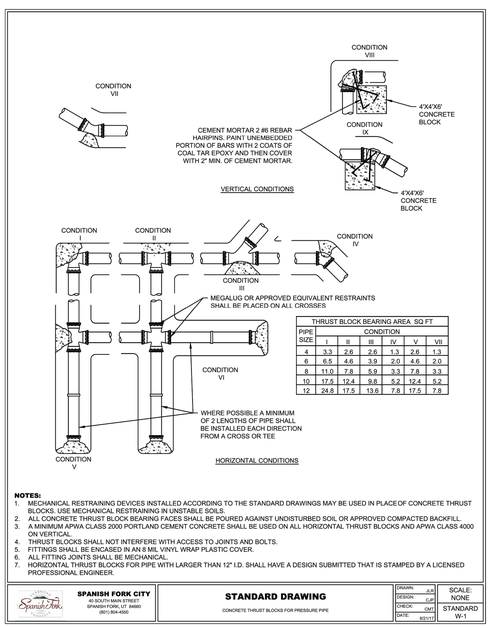
E SEWER SERVICE



NOTES:
1. ALL STORM TRANSMISSION LINES SHALL RUN THROUGH STORM MANHOLES.
2. BOX SHALL BE SIZED ACCORDING TO TABLE ON STANDARD #32.
3. UNLESS OTHERWISE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER, #4 REBAR WILL BE SPACED AT MINIMUM OF 12" O.C. IN ALL DIRECTIONS IN CONCRETE, ALL REBAR SHALL OVERLAP A MINIMUM OF 14".

SPANISH FORK CITY	STANDARD DRAWING		
40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	STORM WATER INLET BOX	DRAWN: JLR / DESIGN: CJP / CHECK: CMT / DATE: 6/21/17	SCALE: NONE / STANDARD SD-4

F STORM INLET BOX



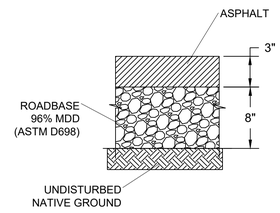
THRUST BLOCK BEARING AREA SQ FT

PIPE SIZE	CONDITION I	II	III	IV	V	VII
4	3.3	2.6	2.6	1.3	2.6	1.3
6	6.5	4.6	3.9	2.0	4.6	2.0
8	11.0	7.8	5.9	3.3	7.8	3.3
10	17.5	12.4	9.8	5.2	12.4	5.2
12	24.8	17.5	13.6	7.8	17.5	7.8

NOTES:
1. MECHANICAL RESTRAINING DEVICES INSTALLED ACCORDING TO THE STANDARD DRAWINGS MAY BE USED IN PLACE OF CONCRETE THRUST BLOCKS. USE MECHANICAL RESTRAINING IN UNSTABLE SOILS.
2. ALL CONCRETE THRUST BLOCK BEARING FACES SHALL BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
3. A MINIMUM APWA CLASS 2000 PORTLAND CEMENT CONCRETE SHALL BE USED ON ALL HORIZONTAL THRUST BLOCKS AND APWA CLASS 4000 ON VERTICAL.
4. THRUST BLOCKS SHALL NOT INTERFERE WITH ACCESS TO JOINTS AND BOLTS.
5. FITTINGS SHALL BE ENCASED IN AN 8 MIL VINYL WRAP PLASTIC COVER.
6. ALL FITTING JOINTS SHALL BE MECHANICAL.
7. HORIZONTAL THRUST BLOCKS FOR PIPE WITH LARGER THAN 12" I.D. SHALL HAVE A DESIGN SUBMITTED THAT IS STAMPED BY A LICENSED PROFESSIONAL ENGINEER.

SPANISH FORK CITY	STANDARD DRAWING		
40 SOUTH MAIN STREET SPANISH FORK, UT 84660 (801) 804-4550	CONCRETE THRUST BLOCKS FOR PRESSURE PIPE	DRAWN: JLR / DESIGN: CJP / CHECK: CMT / DATE: 6/21/17	SCALE: NONE / STANDARD W-1

G TRUST BLOCK



H ASPHALT SECTION

CONSTRUCTION NOTES

DATE ISSUED

Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT # 24SM5586

SCALES

HORIZ: 1" = 30'
VERT:
(24" x 36" SHEET)

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET.

PROJECT NAME:

BLACK ICE

PROJECT LOCATION:

1400 N 300 W SPANISH FORK, UTAH

SHEET TITLE:

DETAILS

PLAN SET: PRELIM

SHEET D1.0

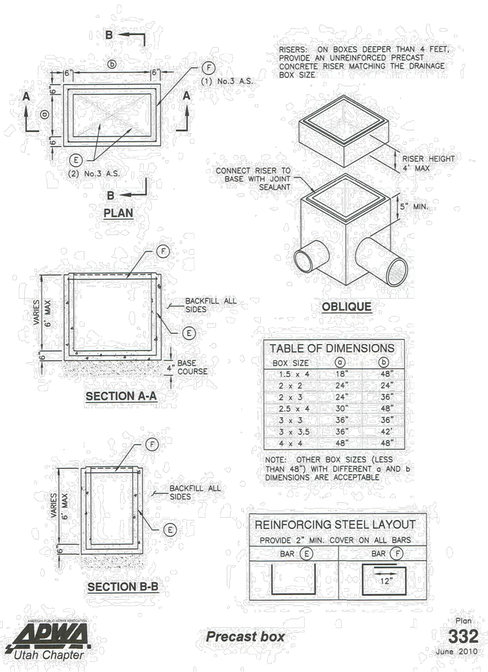
S:\Projects\Block Ice Spanish Fork\Drawings\DWG\Xref\Block Ice_Base New.dwg

Precast box

1. **GENERAL**
   A. The drawing shows typical pipe connections. Refer to construction drawings for connection locations or refer to field location of existing piping when engineering pipe connection to the box.
   B. This drawing is acceptable where the water table elevation is less than 3 feet above the floor of the box. If elevation of water table is higher, engineering calculations and drawings must be submitted to and approved by the ENGINEER.
   C. Submit bar design detail for ENGINEER's review.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Precast Concrete: Class 4000 precast, APWA Section 03 40 00.
   D. Reinforcement: Deformed, 60 ksi yield grade steel, ASTM A615. Coated steel is not required for small drainage structures shown on this drawing.
   E. Frame and Cover (or Grate): Use the appropriate unit indicated in the Contract Documents.
   F. Joint Sealant: Rubber-based, compressible.

3. **EXECUTION**
   A. Concrete Placement: Provide 2-inches of concrete cover over reinforcing steel.
   B. Lifting Points: Provide at least 2 lifting points per section that avoid interference with the reinforcing steel and that are designed according to PCI (Prestressed Concrete Institute) design handbook. Lift only from the engineered lifting points.
   C. Depth: Drainage boxes and riser combinations that exceed 8-feet from finished grade to the bottom of the box requires ENGINEER's approval. Submit design calculations and shop drawings.
   D. Core Holes:
      1) Provide core holes that are at least 4" larger than attaching outer pipe diameter. Cut core holes at the manufacturing plant unless ENGINEER permits field core holes.
      2) Center core holes to leave 2" of concrete measured horizontally from inside wall of the box to core hole. Locate core hole vertically so bottom of core hole will be at or above floor elevation with at least 5-inches of concrete above the core hole to the top of the box.
      3) Deviations from core hole tolerances require shop drawings. Shop drawings will identify lifting point number and location.
   E. Precast Top: Design precast top for AASHTO HL-93 live loads and submit rebar detail and stamped design drawings to ENGINEER. Show connection detail for frame and grate or cover.



APWA Utah Chapter

Precast box

Plan 332 June 2010

A STORM CLEAN OUT BOX

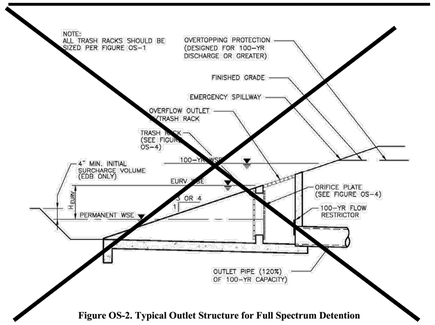


Figure OS-2. Typical Outlet Structure for Full Spectrum Detention

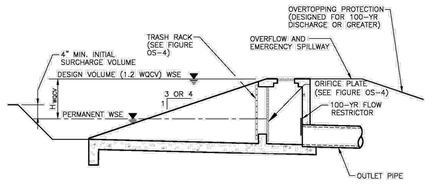
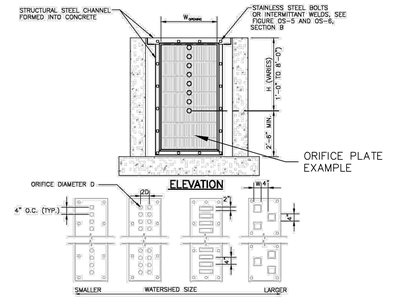


Figure OS-3. Typical Outlet Structure for WQCV Treatment and Attenuation

B OUTLET STRUCTURE

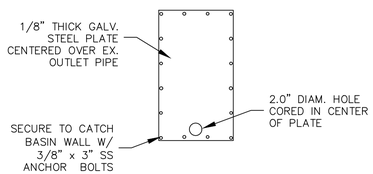


ORIFICE PLATE NOTES:
1. MINIMIZE THE NUMBER OF COLUMNS.
2. PROVIDE GASKET MATERIAL BETWEEN THE ORIFICE PLATE AND CONCRETE.
3. BOLT PLATE TO CONCRETE 12" MAX. ON CENTER.

EURV AND WQCV TRASH RACKS:
1. WELL-SCREEN TRASH RACKS SHALL BE STAINLESS STEEL AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.
2. BAR GRATE TRASH RACKS SHALL BE ALUMINUM AND SHALL BE BOLTED USING STAINLESS STEEL HARDWARE.
3. TRASH RACK WIDTHS PROVIDED IN TABLE OS-2A AND OS-3A ARE FOR SPECIFIED TRASH RACK MATERIAL AND NEED TO BE ADJUSTED FOR MATERIALS HAVING A DIFFERENT OPEN AREA/GROSS AREA RATIO (R VALUE)
4. STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.

OVERFLOW TRASH RACKS:
1. ALL TRASH RACKS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE AND PROVIDED WITH HINGED AND LOCKABLE OR BOLTABLE ACCESS PANELS.
2. TRASH RACKS SHALL BE STAINLESS STEEL, ALUMINUM, OR STEEL. STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND MAY BE HOT POWDER COATED AFTER GALVANIZING.
3. TRASH RACKS SHALL BE DESIGNED SUCH THAT THE DIAGONAL DIMENSION OF EACH OPENING IS SMALLER THAN THE DIAMETER OF THE OUTLET PIPE.
4. STRUCTURAL DESIGN OF TRASH RACKS SHALL BE BASED ON FULL HYDROSTATIC HEAD WITH ZERO HEAD DOWNSTREAM OF THE RACK.

Figure OS-4. Orifice Plate and Trash Rack



C OUTLET PLATE

S:\Projects\Black Ice Spanish Fork\Drawings\DWG\Xref\Block Ice_Base New.dwg

CONSTRUCTION NOTES

DATE ISSUED
Issue Date

epic ENGINEERING

REVISIONS

REV #	BY	DATE	DESCRIPTION

DRAWN: EH
DESIGNER: EH
REVIEWED: KCW

PROJECT #
24SM5586

SCALES
HORIZ: 1" = 30'
VERT:
(24" x 36" SHEET)
0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST IF FOR A HALF SIZE SHEET.

PROJECT NAME:
BLACK ICE

PROJECT LOCATION:
1400 N 300 W
SPANISH FORK, UTAH

SHEET TITLE:
DETAILS

PLAN SET: PRELIM
SHEET D2.0