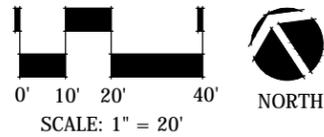


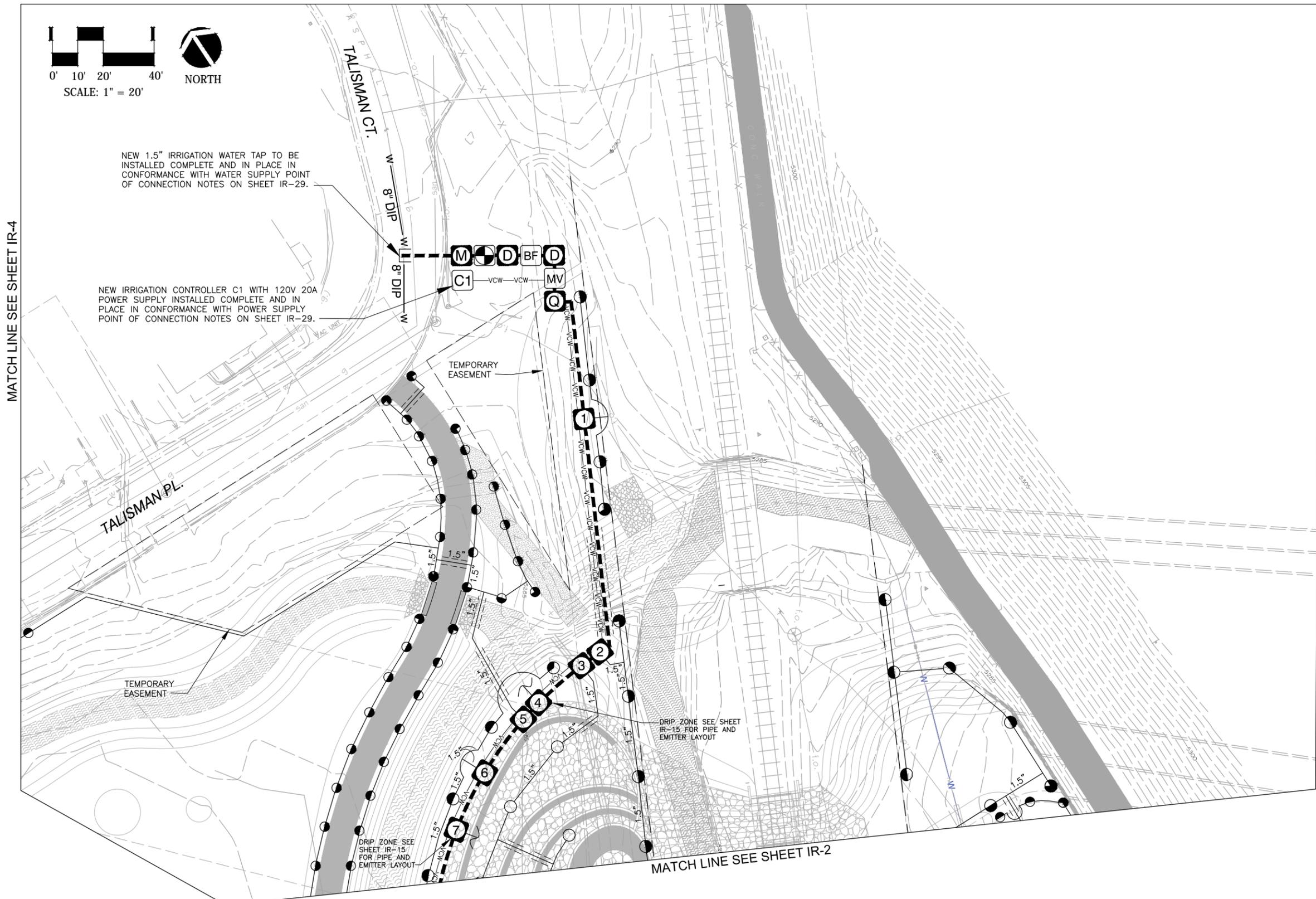
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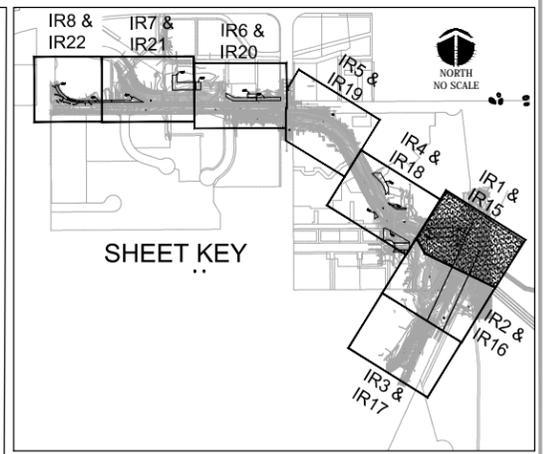
NEW 1.5" IRRIGATION WATER TAP TO BE INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH WATER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.

NEW IRRIGATION CONTROLLER C1 WITH 120V 20A POWER SUPPLY INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH POWER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.

MATCH LINE SEE SHEET IR-4



MATCH LINE SEE SHEET IR-2



IRRIGATION DESIGN BY:
Applied Design Services
 9721 Bayou Ridge Trail
 Parker, Colorado 80134
 (303) 841-7077
 Fax - 841-8191



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Drawing File Name:	

Scale: AS SHOWN

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MEC PROJECT NO. 11039.03



Sheet Revisions

Date:	Comments	Init.



Region 4



CITY OF BOULDER

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

**SPRAY IRRIGATION
 LAYOUT PLAN**

Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-1

Project No./Code

STM 110-081

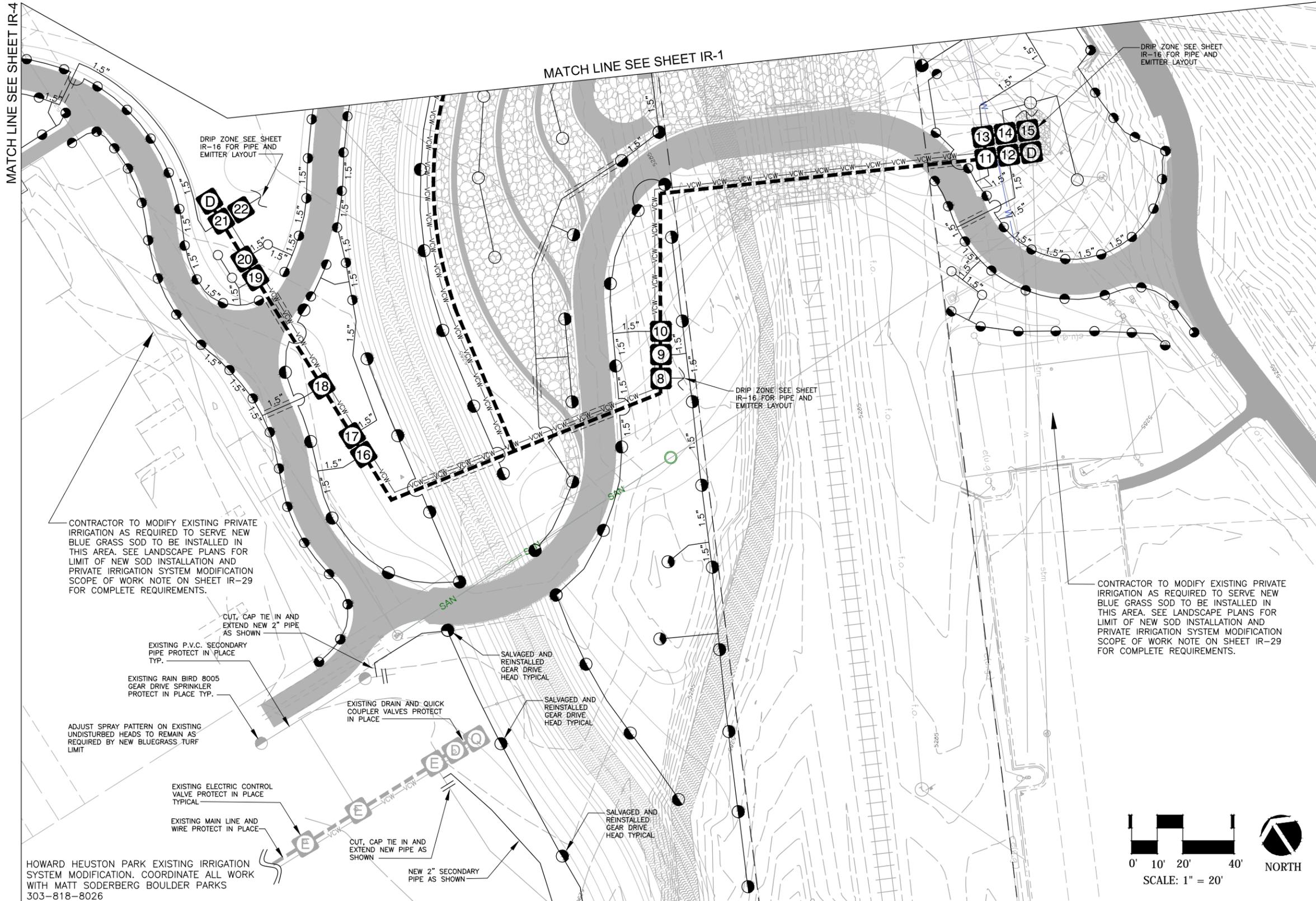
18405

Sheet Number: **387**

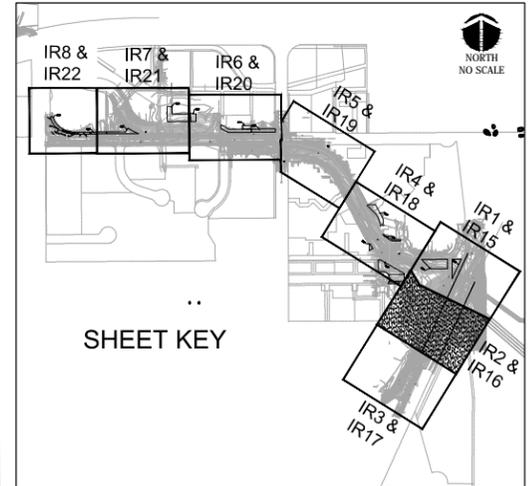
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MATCH LINE SEE SHEET IR-4

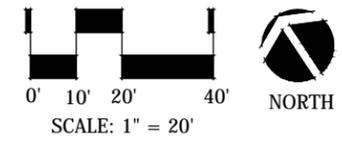
MATCH LINE SEE SHEET IR-1



MATCH LINE SEE SHEET IR-3



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Parker, Colorado 80134
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Drawing File Name:	

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Date:	Comments	Init.



Region 4



CITY OF BOULDER

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

SPRAY IRRIGATION LAYOUT PLAN

Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-2

Project No./Code

STM 110-081

18405

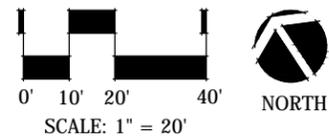
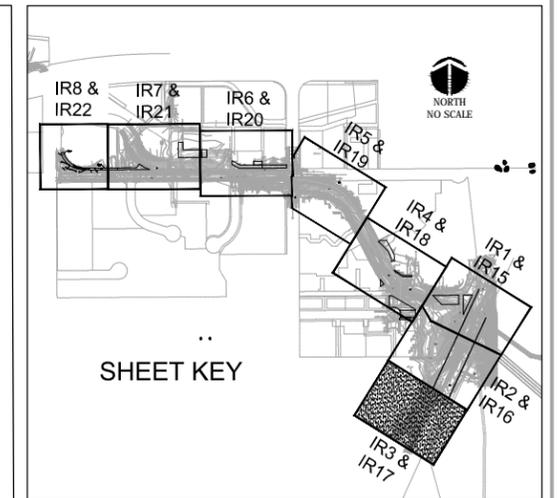
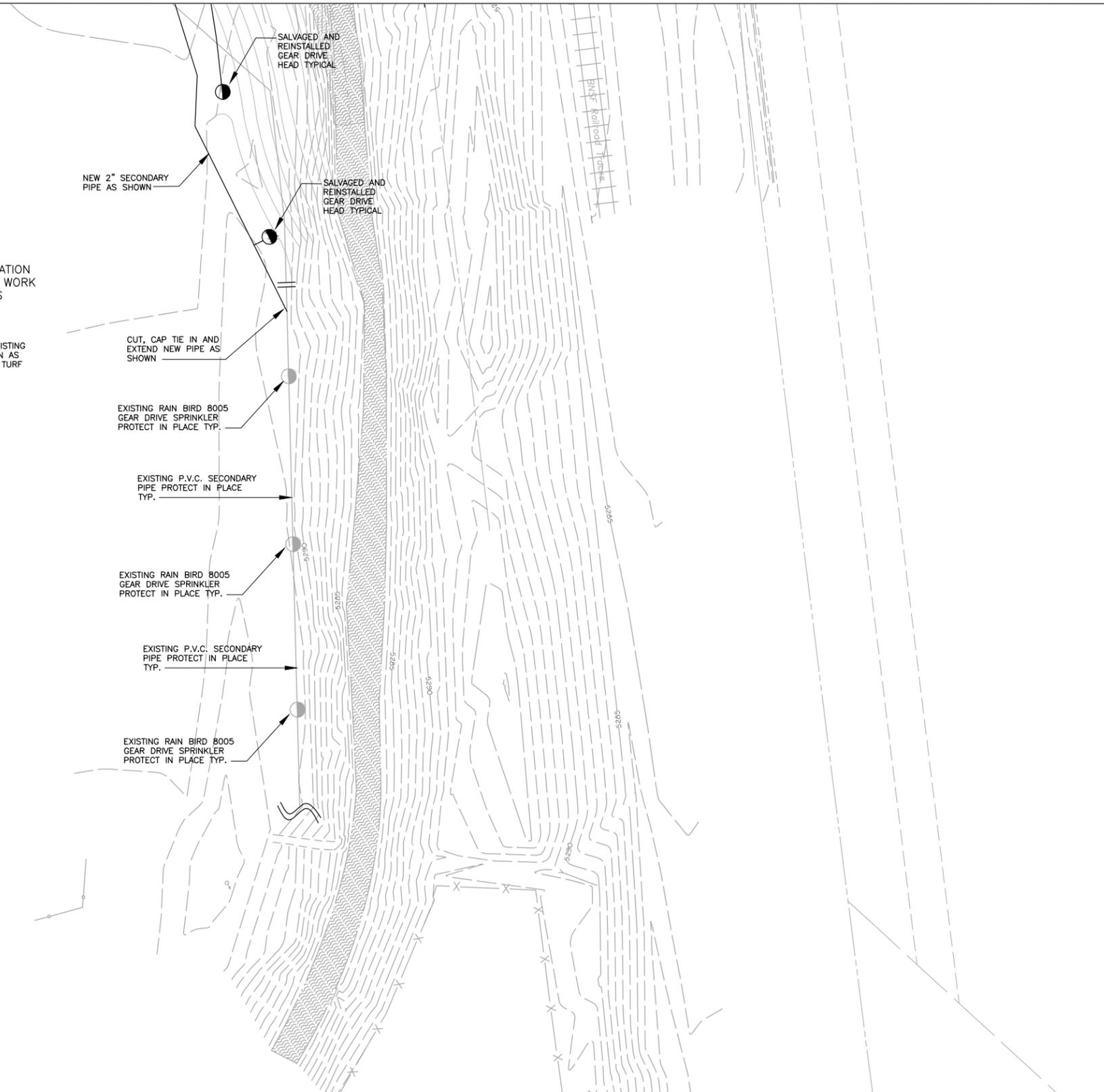
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MATCH LINE SEE SHEET IR-2

HOWARD HEUSTON PARK EXISTING IRRIGATION SYSTEM MODIFICATION. COORDINATE ALL WORK WITH MATT SODERBERG BOULDER PARKS 303-818-8026

ADJUST SPRAY PATTERN ON EXISTING UNDISTURBED HEADS TO REMAIN AS REQUIRED BY NEW BLUEGRASS TURF LIMIT



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 (303) 988-4939



MEC PROJECT NO. 11039.03



Sheet Revisions

Date:	Comments	Init.
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WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

SPRAY IRRIGATION LAYOUT PLAN

Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-3

Project No./Code

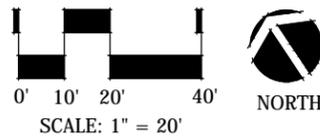
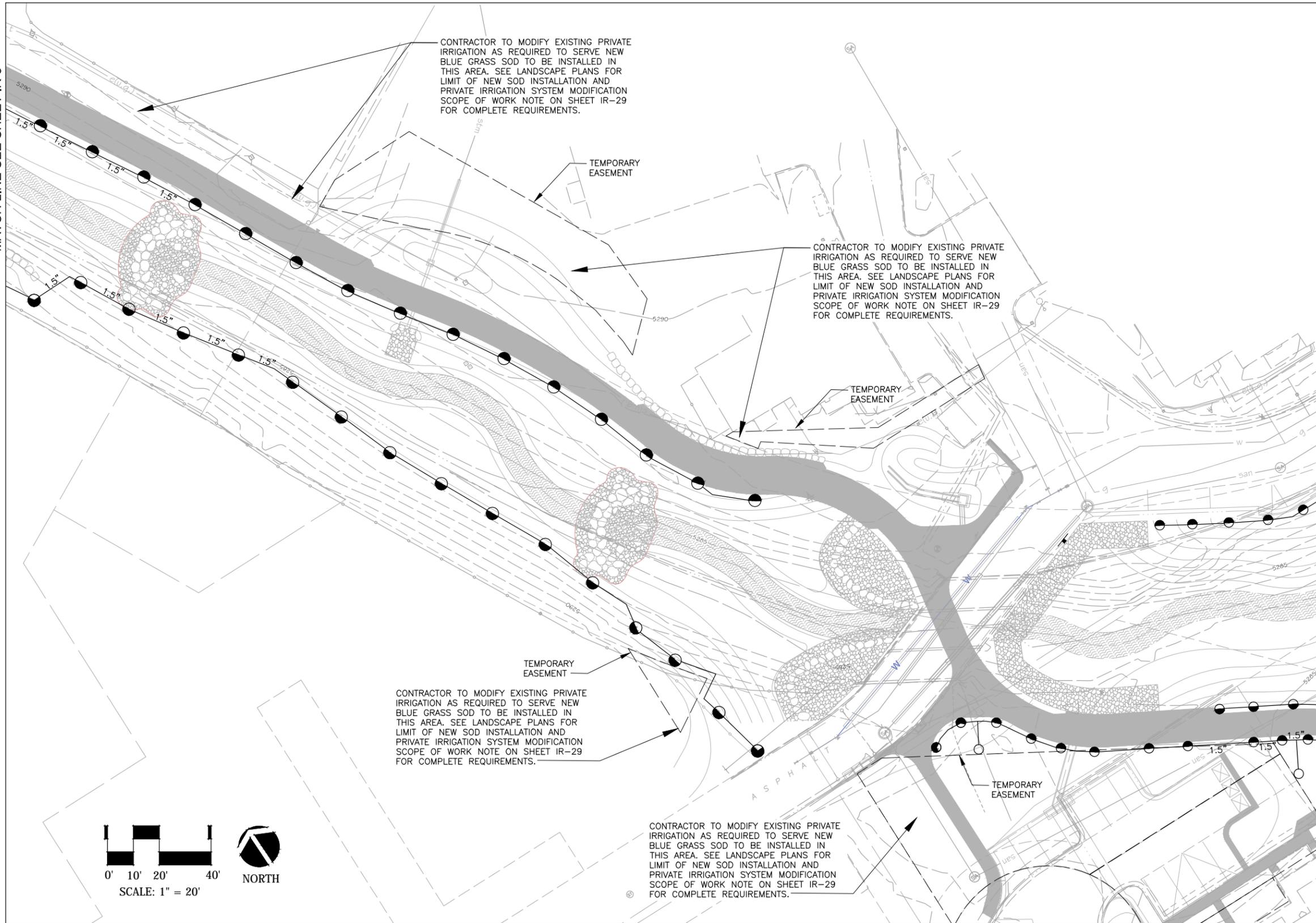
STM 110-081

18405

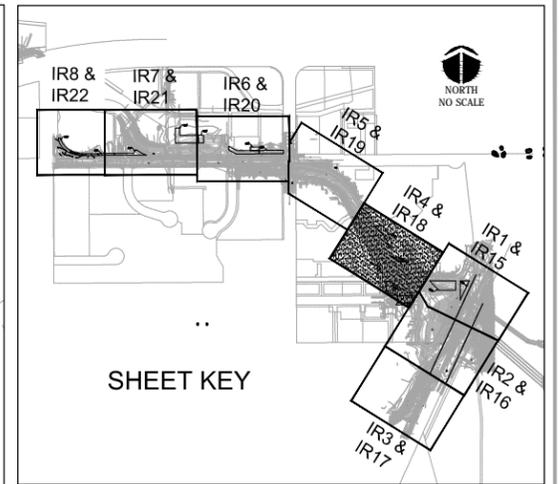
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MATCH LINE SEE SHEET IR-5



MATCH LINE SEE SHEET IR-1



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Last Modification Date:	Initials:
Full Path:	
Drawing File Name:	

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(303) 988-4939



MEC PROJECT NO. 11039.03



Sheet Revisions

Date:	Comments	Init.
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Region 4



CITY OF BOULDER

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

**SPRAY IRRIGATION
LAYOUT PLAN**

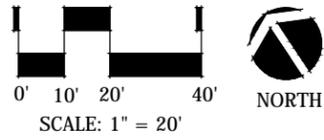
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-4

Project No./Code

STM 110-081

18405

Sheet Number: **390**



CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

NEW IRRIGATION CONTROLLER C2 WITH 120V 20A POWER SUPPLY INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH POWER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

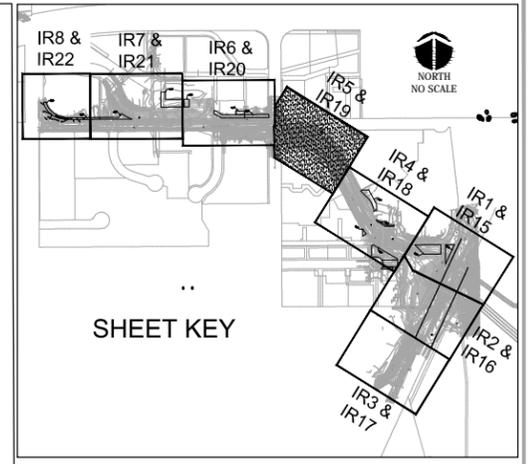
DRIP ZONE SEE SHEET IR-19 FOR PIPE AND EMITTER LAYOUT

DRIP ZONE SEE SHEET IR-19 FOR PIPE AND EMITTER LAYOUT

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

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NEW 1.5" IRRIGATION WATER TAP TO BE INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH WATER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.



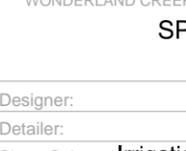
SHEET KEY

MATCH LINE SEE SHEET IR-4

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 (303) 841-7077
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NAME: C:\Users\Mike Holwegger\Documents\AA-PROJECT-FILES\WONDERLAND CREEK\AutoCAD Files\WONDERLAND CREEK Lower Reach Base 02-13-15\downstream set 10-28-14\Lower Reach Irr CDs 06-19-14.dwg DATE: 6/18/2016 9:28:13 AM

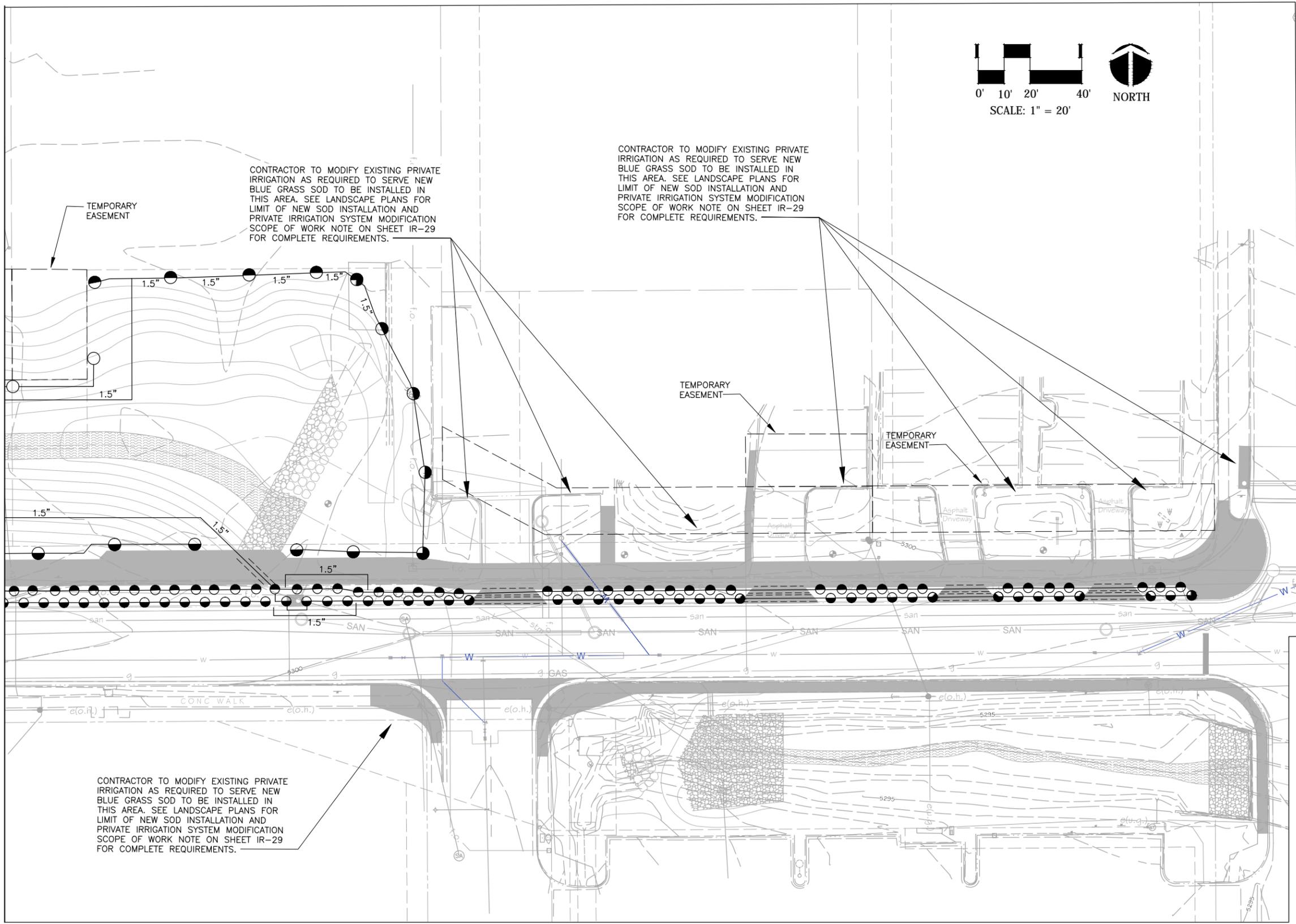
Computer File Information Creation Date: _____ Initials: _____ Last Modification Date: _____ Initials: _____ Full Path: _____ Drawing File Name: _____		MULLER ENGINEERING CO., INC. CONSULTING ENGINEERS 777 S. WADSWORTH BLVD. 4-100 LAKEWOOD, COLORADO 80226 (303) 988-4939 		Sheet Revisions <table border="1"> <thead> <tr> <th>Date:</th> <th>Comments</th> <th>Init.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		Date:	Comments	Init.													   		WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT SPRAY IRRIGATION LAYOUT PLAN Designer: _____ Structure Numbers: _____ Detailer: _____ Sheet Subset: Irrigation Subset Sheets: IR-5		Project No./Code STM 110-081 18405 Sheet Number: 391	
Date:	Comments	Init.																								

Scale: AS SHOWN

MEC PROJECT NO. 11039.03

NAME: C:\Users\Mike Holwegger\Documents\AA-PROJECT-FILES\WONDERLAND CREEK\AutoCAD Files\WONDERLAND CREEK\Lower Reach Base 02-13-15\downstream set 10-28-14\Lower Reach Irr CDs 06-19-14.dwg DATE: 6/18/2015 9:29:00 AM

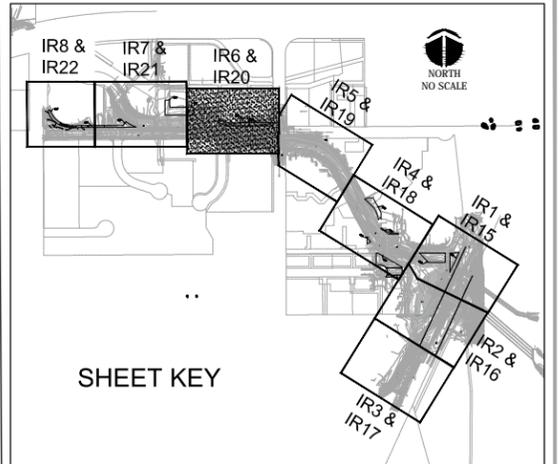
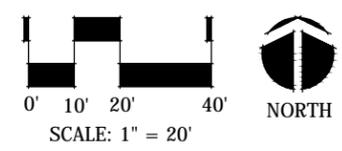
MATCH LINE SEE SHEET IR-7



CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.



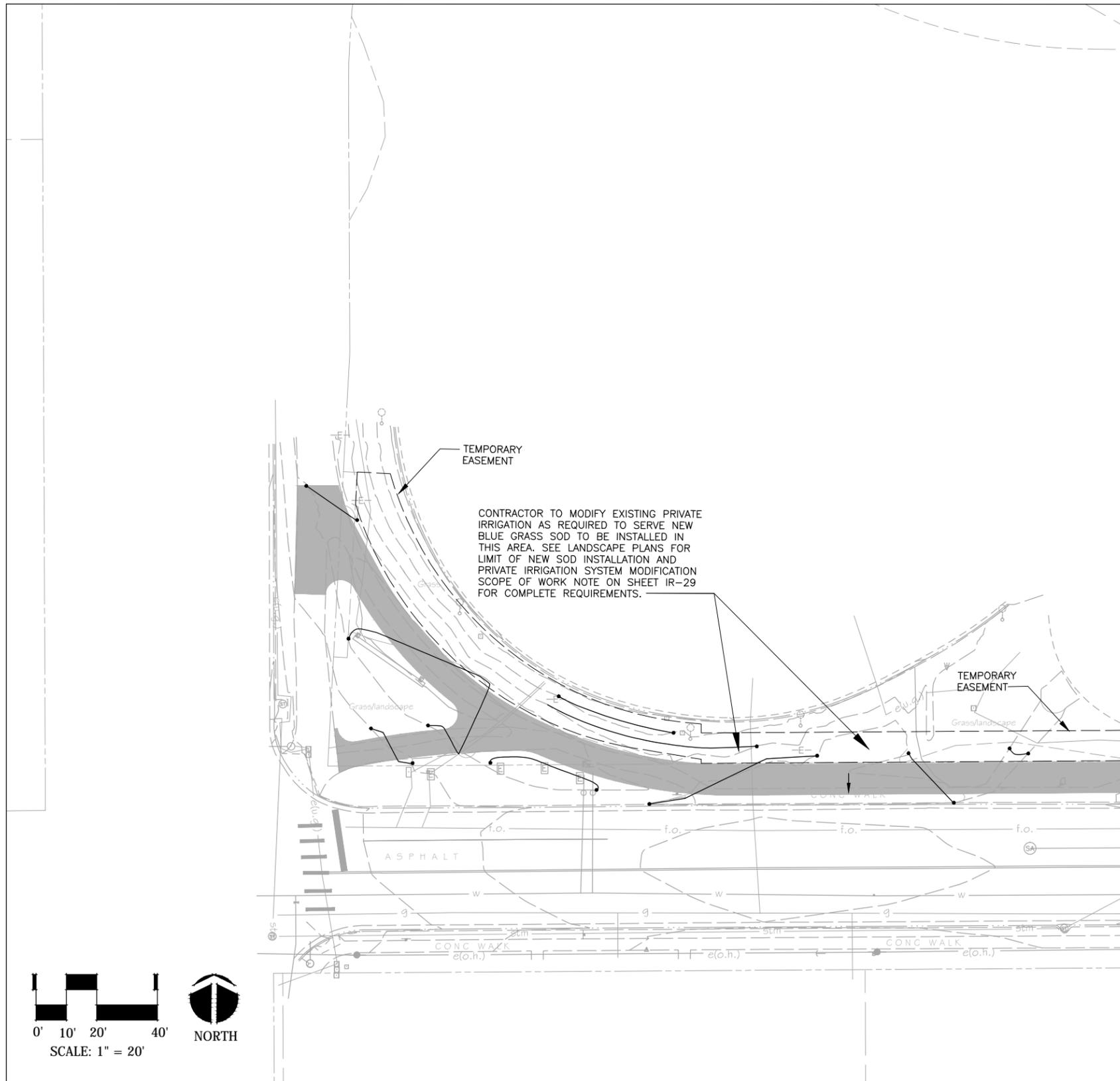
MATCH LINE SEE SHEET IR-5

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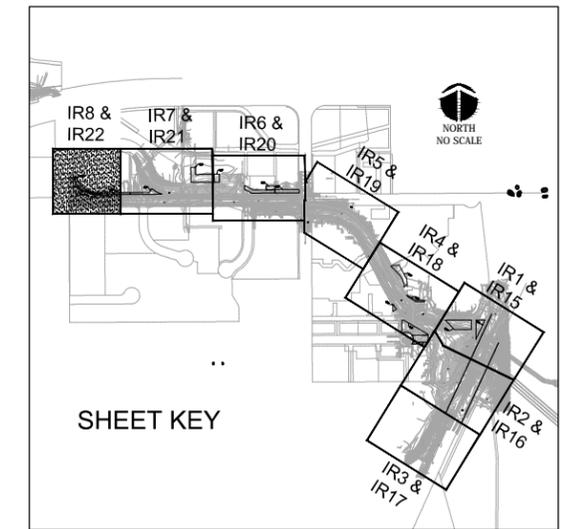
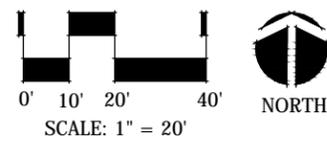


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Date:	Comments	Init.																											



MATCH LINE SEE SHEET IR-7

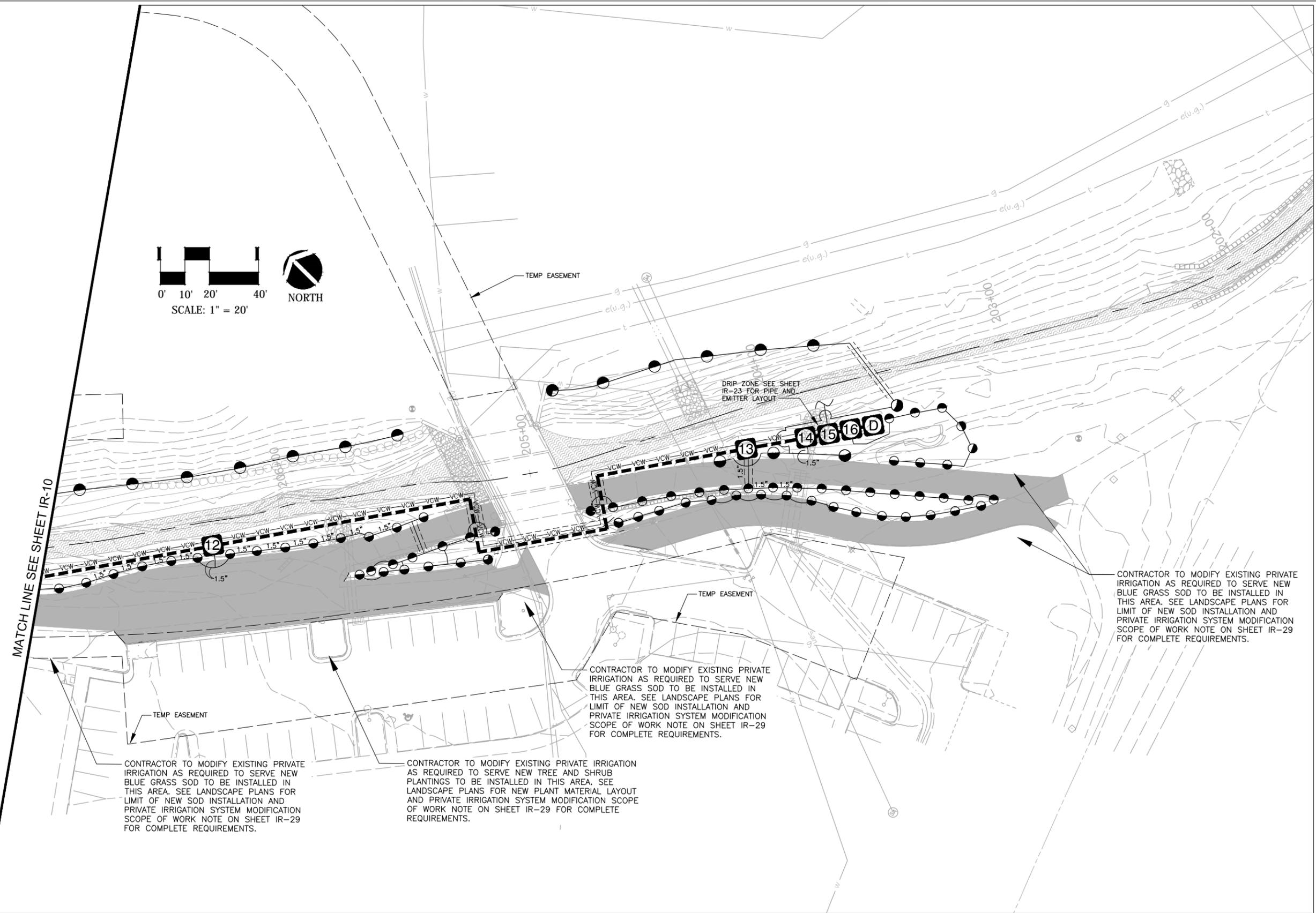
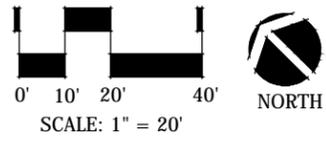
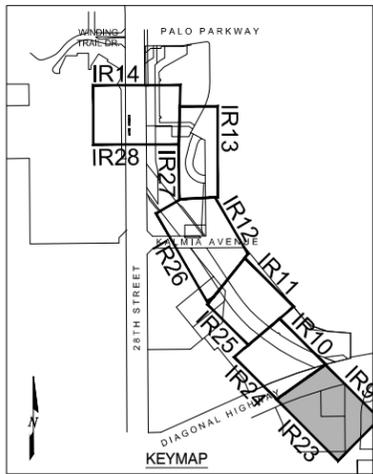


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Date:	Comments	Init.																													



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NAME: P:11-039.11_Wonderland Creek - Dig Hwy to Winding Trail\CAD\Drawings\11039.11_Drainage_Plans.dwg DATE: JUN 30, 2014 TIME: 1:44 PM

Computer File Information	
Creation Date:	Initials:
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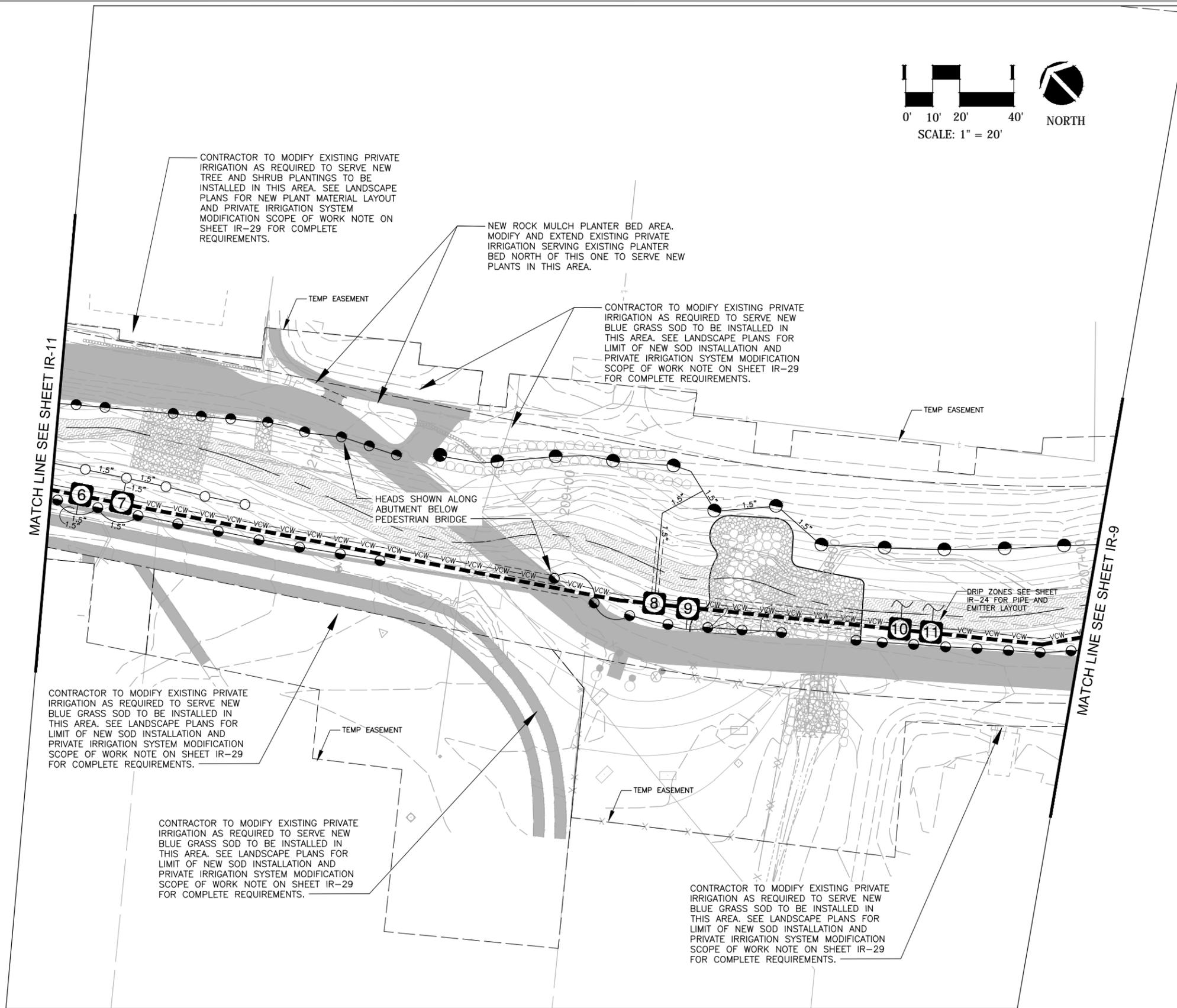
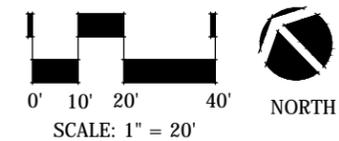
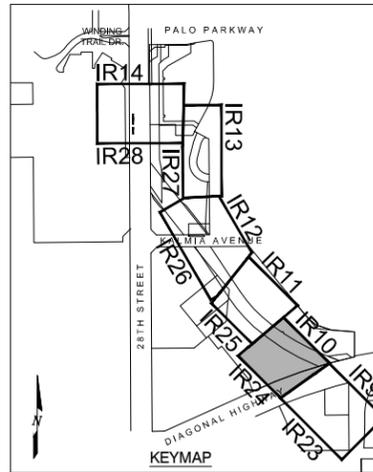
MEC PROJECT NO. 11039.03



Sheet Revisions		
Date:	Comments	Init.

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
SPRAY IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-9

Project No./Code	STM 110-081
	18405
Sheet Number:	395



CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW TREE AND SHRUB PLANTINGS TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR NEW PLANT MATERIAL LAYOUT AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

NEW ROCK MULCH PLANTER BED AREA. MODIFY AND EXTEND EXISTING PRIVATE IRRIGATION SERVING EXISTING PLANTER BED NORTH OF THIS ONE TO SERVE NEW PLANTS IN THIS AREA.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

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DRIP ZONES SEE SHEET IR-24 FOR PIPE AND EMITTER LAYOUT

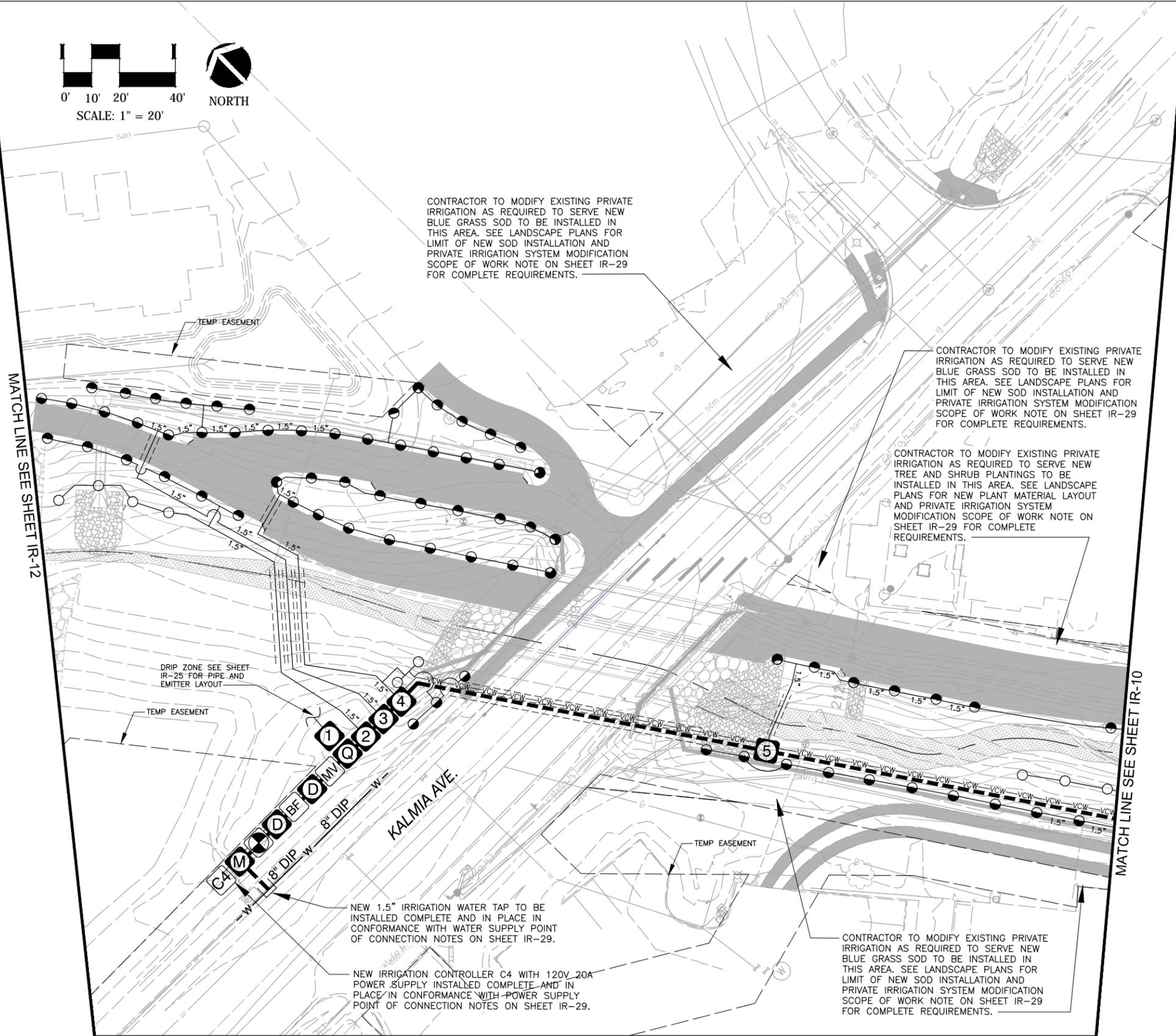
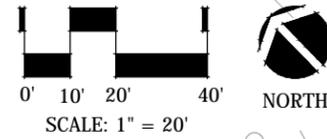
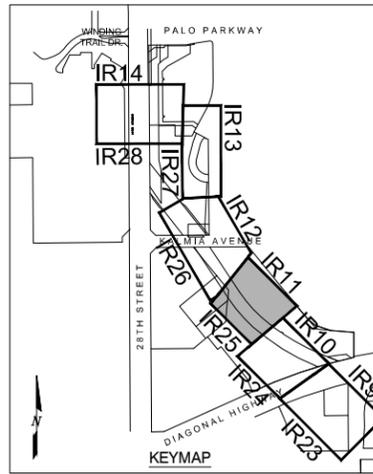
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Date:	Comments	Init.																											



CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW TREE AND SHRUB PLANTINGS TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR NEW PLANT MATERIAL LAYOUT AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

DRIP ZONE SEE SHEET IR-25 FOR PIPE AND EMITTER LAYOUT

NEW 1.5" IRRIGATION WATER TAP TO BE INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH WATER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.

NEW IRRIGATION CONTROLLER C4 WITH 120V, 20A POWER SUPPLY INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH POWER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

MATCH LINE SEE SHEET IR-12

MATCH LINE SEE SHEET IR-10

NAME: P1114398.11_Wonderland Creek - Dig Hwy to Winding Trail\CAD\Drawings\11039.11_Drainage_Plans.dwg DATE: JUN 30, 2014 TIME: 1:52 PM

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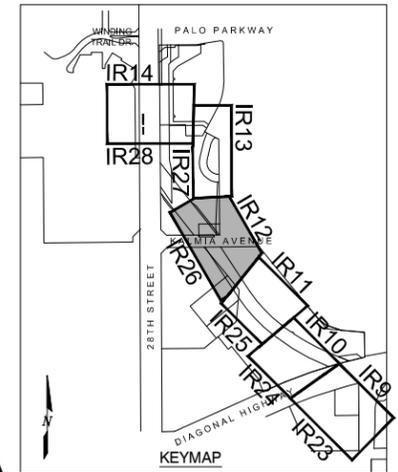
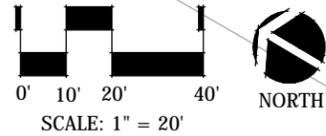
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Sheet Revisions		
Date:	Comments	Init.

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SPRAY IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-11

Project No./Code	STM 110-081
	18405
Sheet Number:	397



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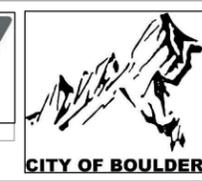
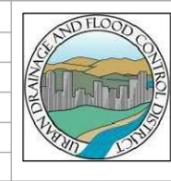
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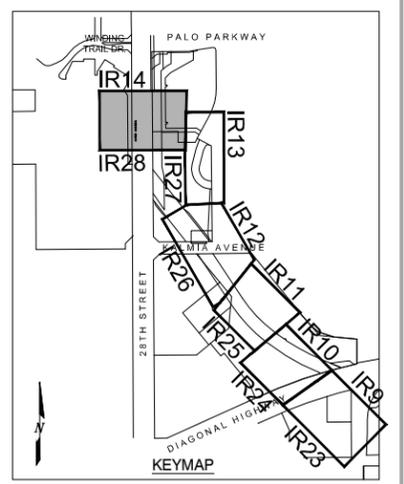
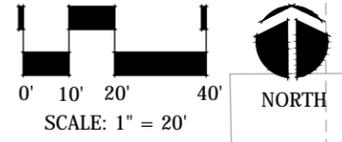
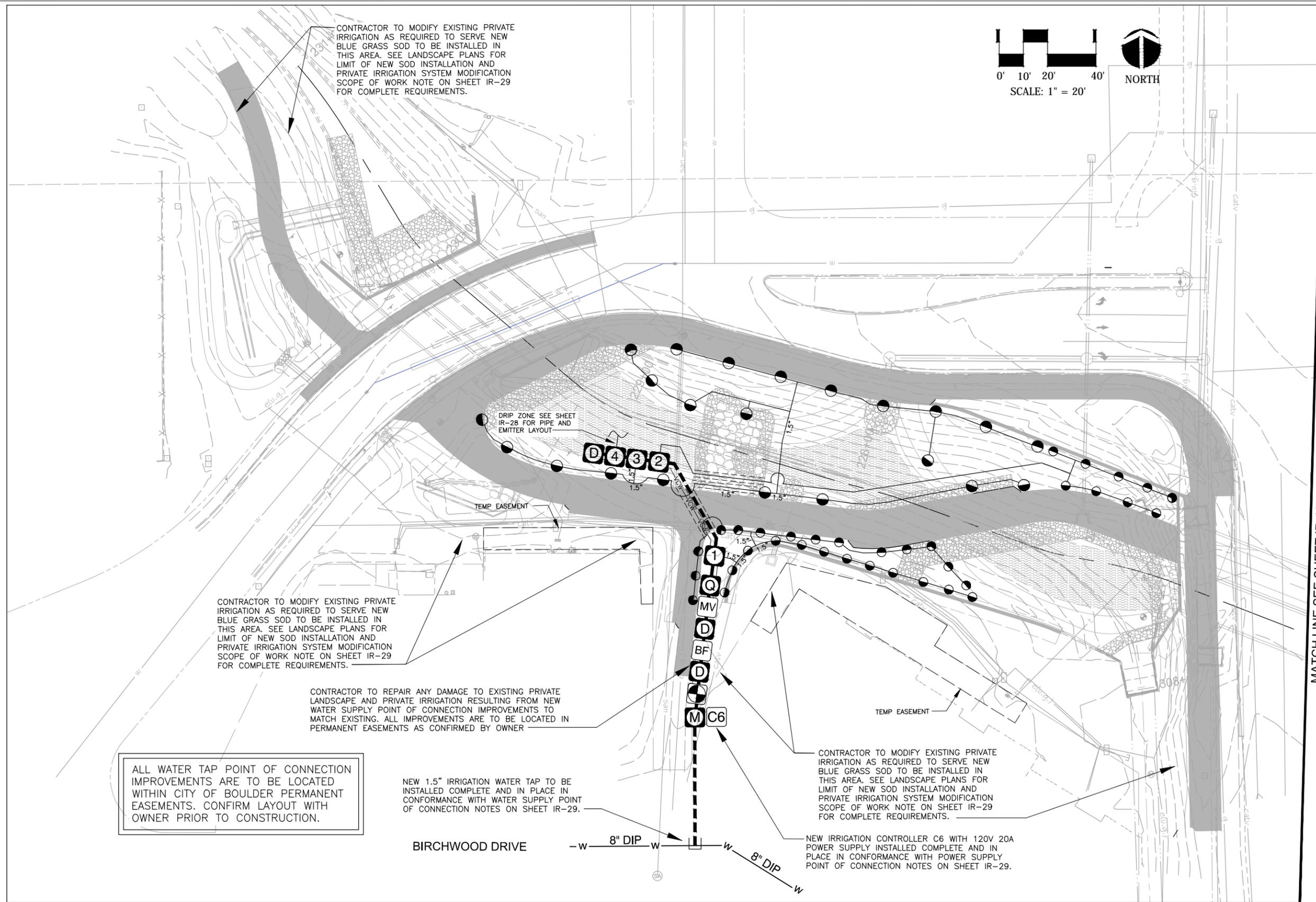


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WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
SPRAY IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-12

Project No./Code	STM 110-081
	18405
Sheet Number:	398



ALL WATER TAP POINT OF CONNECTION IMPROVEMENTS ARE TO BE LOCATED WITHIN CITY OF BOULDER PERMANENT EASEMENTS. CONFIRM LAYOUT WITH OWNER PRIOR TO CONSTRUCTION.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

CONTRACTOR TO REPAIR ANY DAMAGE TO EXISTING PRIVATE LANDSCAPE AND PRIVATE IRRIGATION RESULTING FROM NEW WATER SUPPLY POINT OF CONNECTION IMPROVEMENTS TO MATCH EXISTING. ALL IMPROVEMENTS ARE TO BE LOCATED IN PERMANENT EASEMENTS AS CONFIRMED BY OWNER

NEW 1.5" IRRIGATION WATER TAP TO BE INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH WATER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.

CONTRACTOR TO MODIFY EXISTING PRIVATE IRRIGATION AS REQUIRED TO SERVE NEW BLUE GRASS SOD TO BE INSTALLED IN THIS AREA. SEE LANDSCAPE PLANS FOR LIMIT OF NEW SOD INSTALLATION AND PRIVATE IRRIGATION SYSTEM MODIFICATION SCOPE OF WORK NOTE ON SHEET IR-29 FOR COMPLETE REQUIREMENTS.

NEW IRRIGATION CONTROLLER C6 WITH 120V 20A POWER SUPPLY INSTALLED COMPLETE AND IN PLACE IN CONFORMANCE WITH POWER SUPPLY POINT OF CONNECTION NOTES ON SHEET IR-29.

MATCH LINE SEE SHEET IR-13

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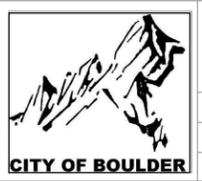
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Date:	Comments	Init.

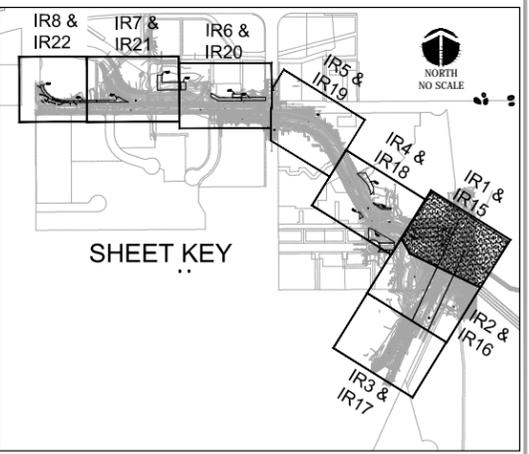
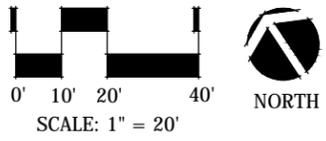


WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
SPRAY IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	Numbers
Sheet Subset: Irrigation	Subset Sheets: IR-14

Project No./Code	STM 110-081
	18405
Sheet Number:	400

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MATCH LINE SEE SHEET IR-18



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Region 4
CITY OF BOULDER

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
DRIP IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-15

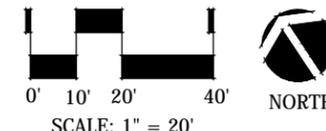
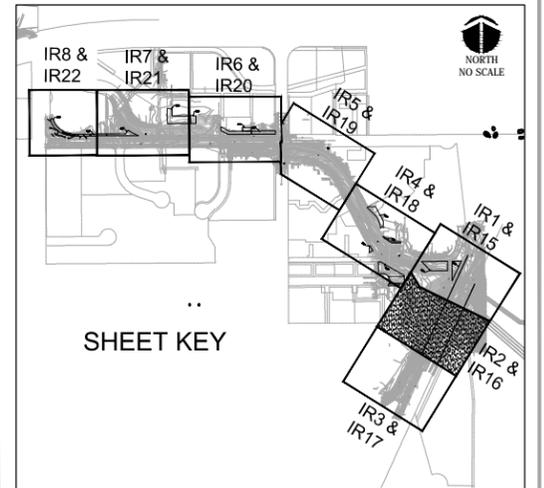
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	18405
Sheet Number	401

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MATCH LINE SEE SHEET IR-18

MATCH LINE SEE SHEET IR-15

MATCH LINE SEE SHEET IR-17



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WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

**DRIP IRRIGATION
 LAYOUT PLAN**

Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-16

Project No./Code

STM 110-081

18405

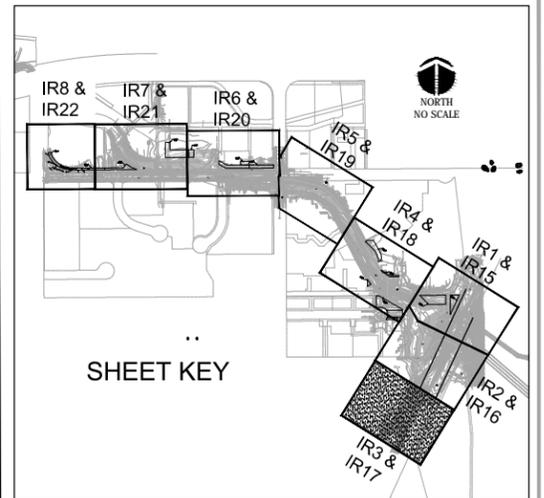
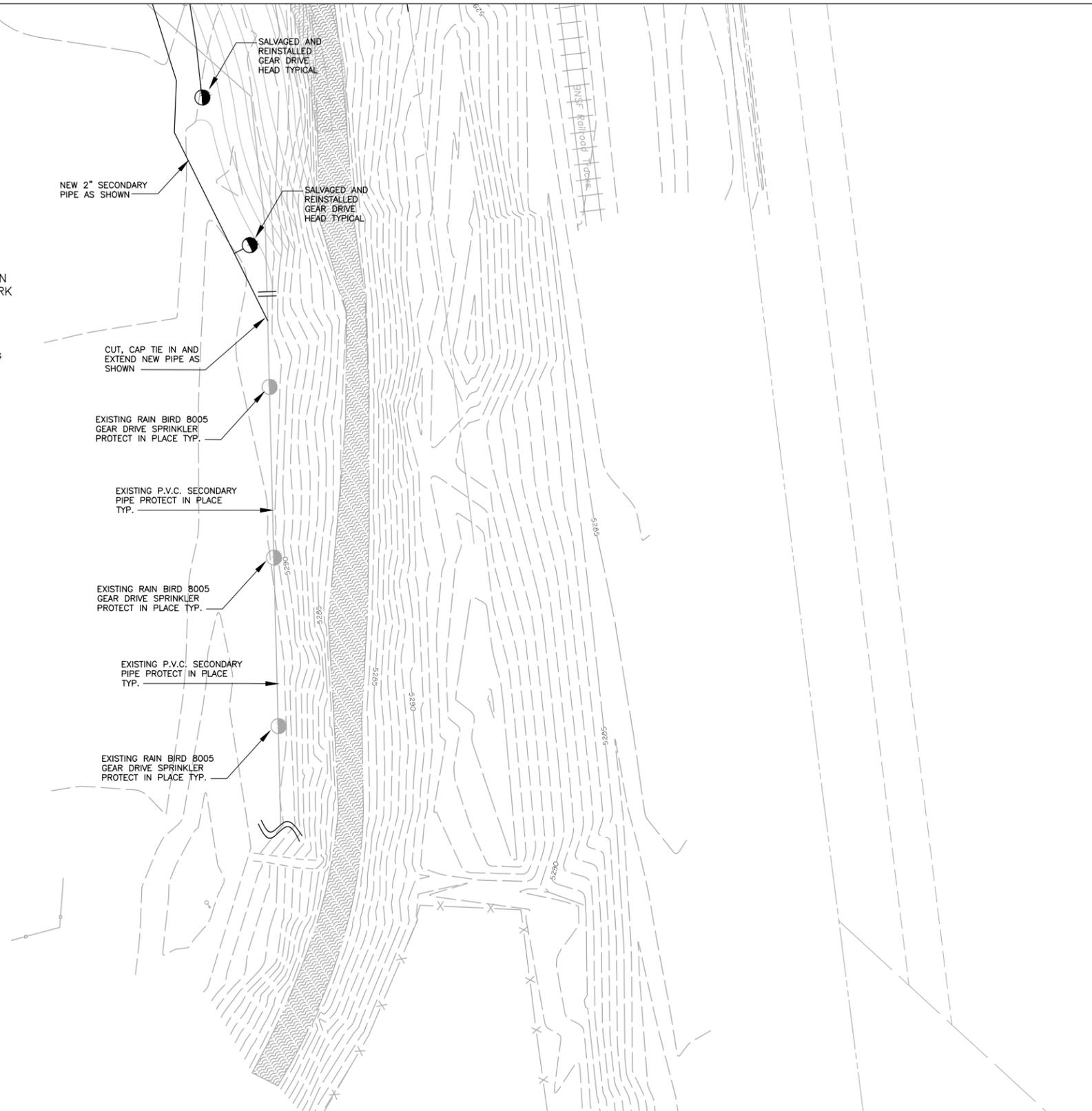
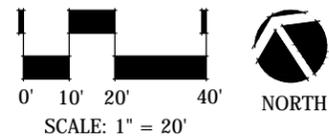
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MATCH LINE SEE SHEET IR-16

HOWARD HEUSTON PARK EXISTING IRRIGATION SYSTEM MODIFICATION. COORDINATE ALL WORK WITH MATT SODERBERG BOULDER PARKS 303-818-8026

ADJUST SPRAY PATTERN ON EXISTING UNDISTURBED HEADS TO REMAIN AS REQUIRED BY NEW BLUEGRASS TURF LIMIT



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Date:	Comments	Init.
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Region 4



CITY OF BOULDER

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

DRIP IRRIGATION LAYOUT PLAN

Designer:	Structure Numbers
Detailer:	

Sheet Subset: Irrigation Subset Sheets: IR-17

Project No./Code

STM 110-081

18405

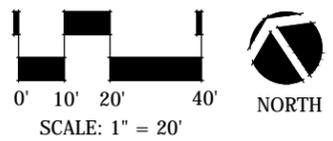
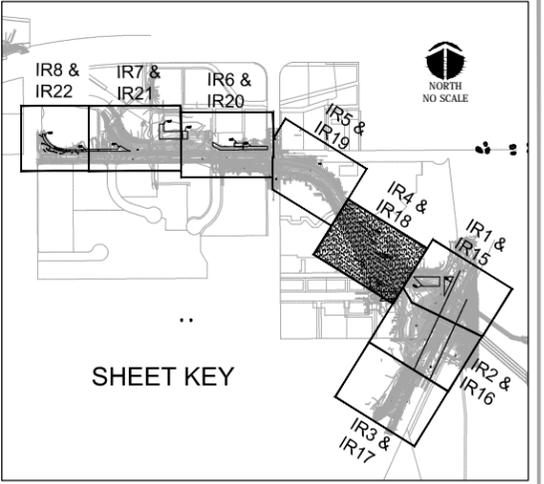
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MATCH LINE SEE SHEET IR-19



MATCH LINE SEE SHEET IR-15



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Date:	Comments	Init.																											

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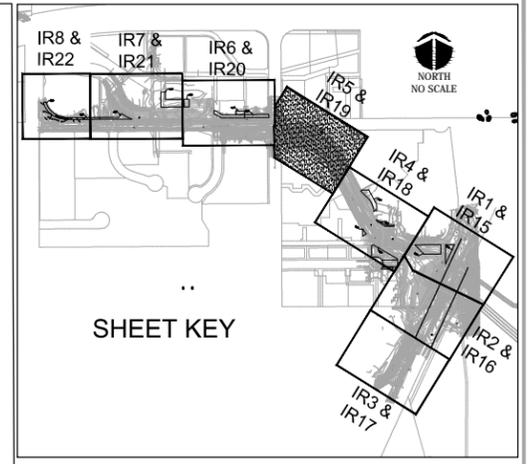
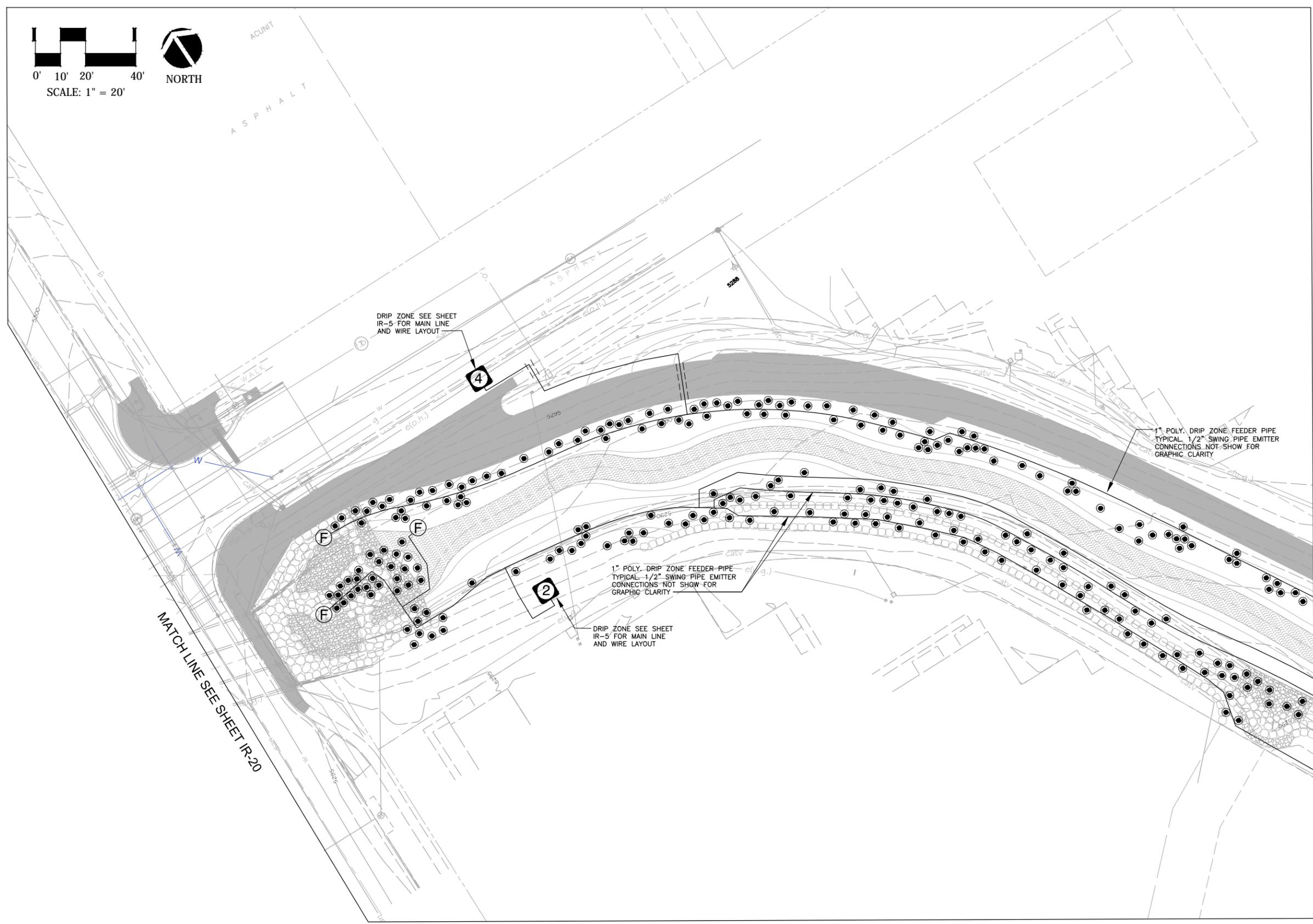
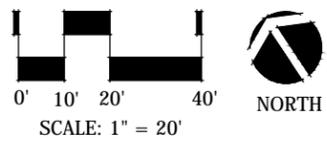
Region 4

Sheet Subset: Irrigation

Subset Sheets: IR-18

Sheet Number: 404

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MATCH LINE SEE SHEET IR-18

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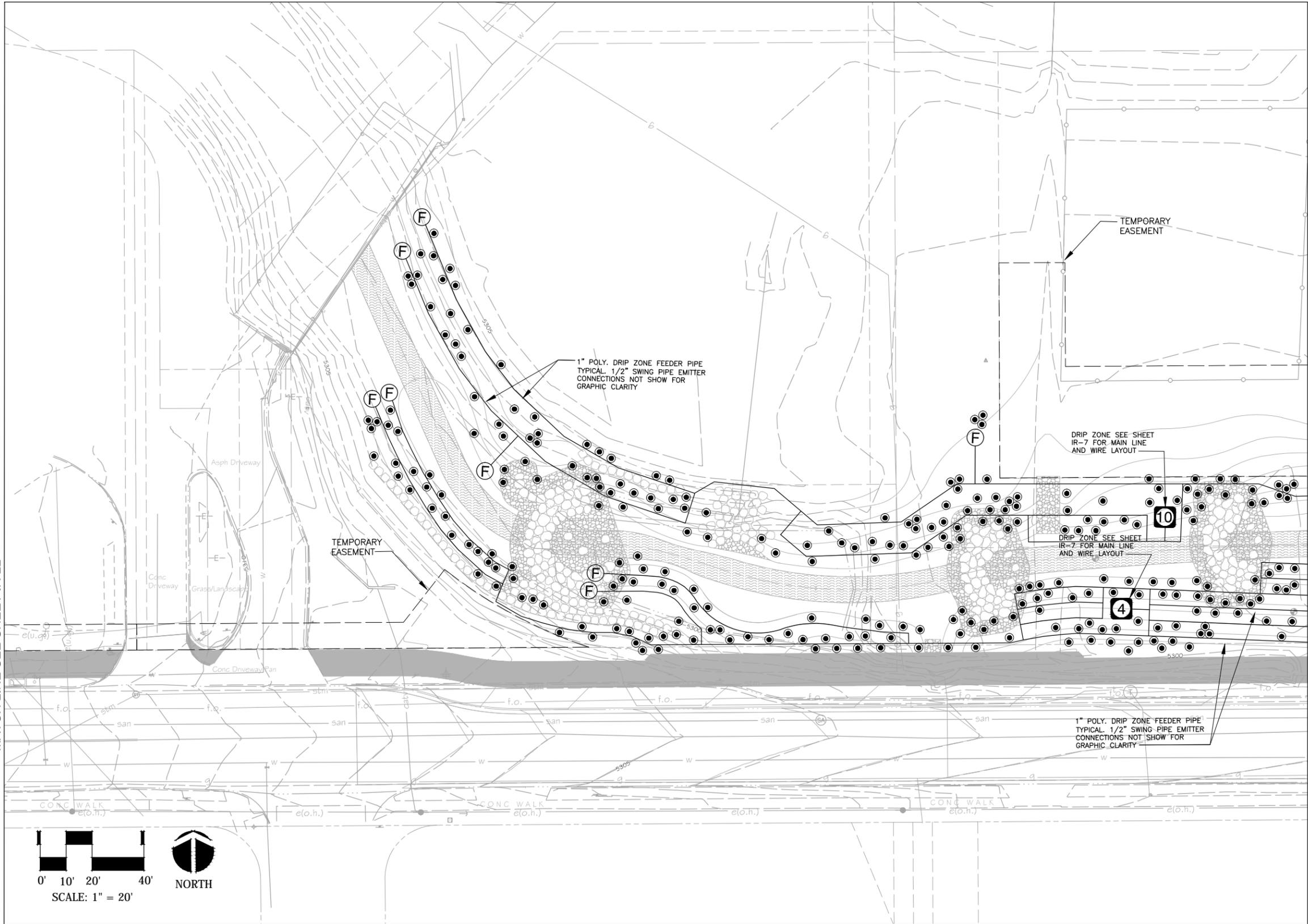
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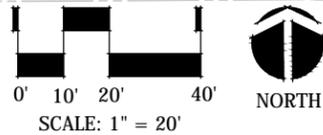
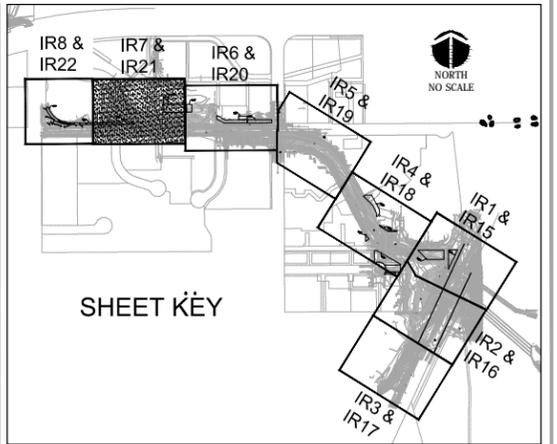
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	18405
Sheet Number:	405

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MATCH LINE SEE SHEET IR-22



MATCH LINE SEE SHEET IR-20



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WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

DRIP IRRIGATION LAYOUT PLAN

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Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-21

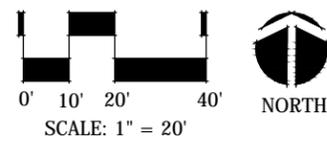
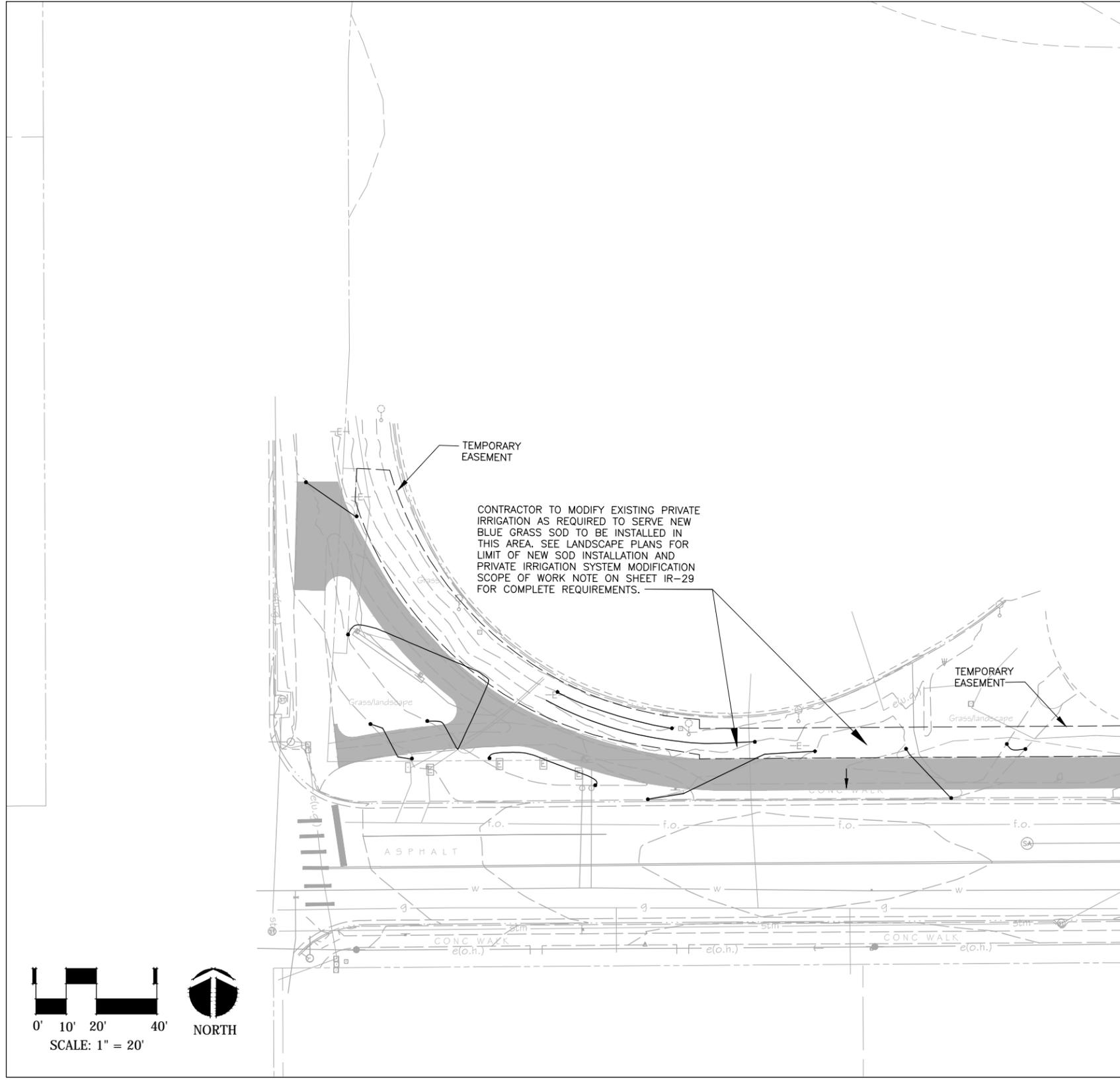
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STM 110-081

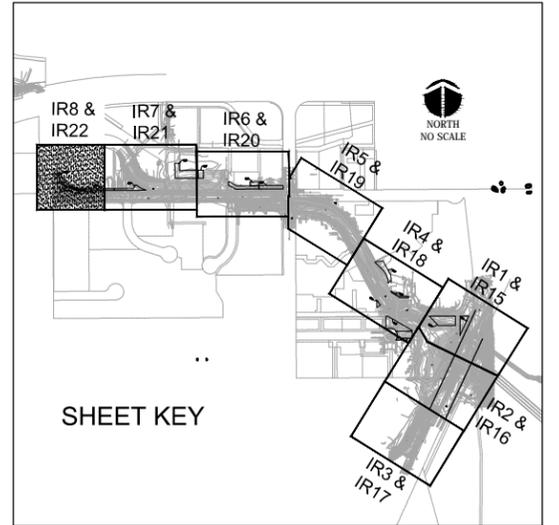
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MATCH LINE SEE SHEET IR-21

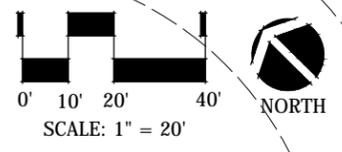
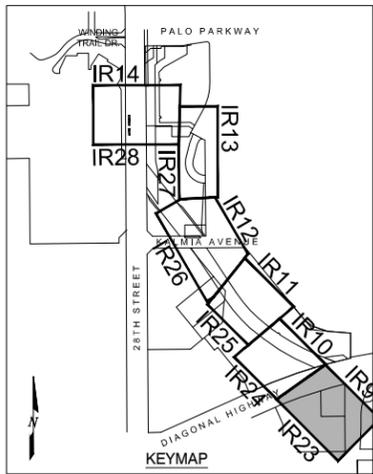


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Date:	Comments	Init.																													



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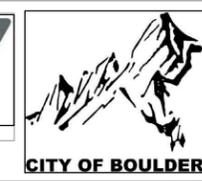
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MEC PROJECT NO. 11039.03

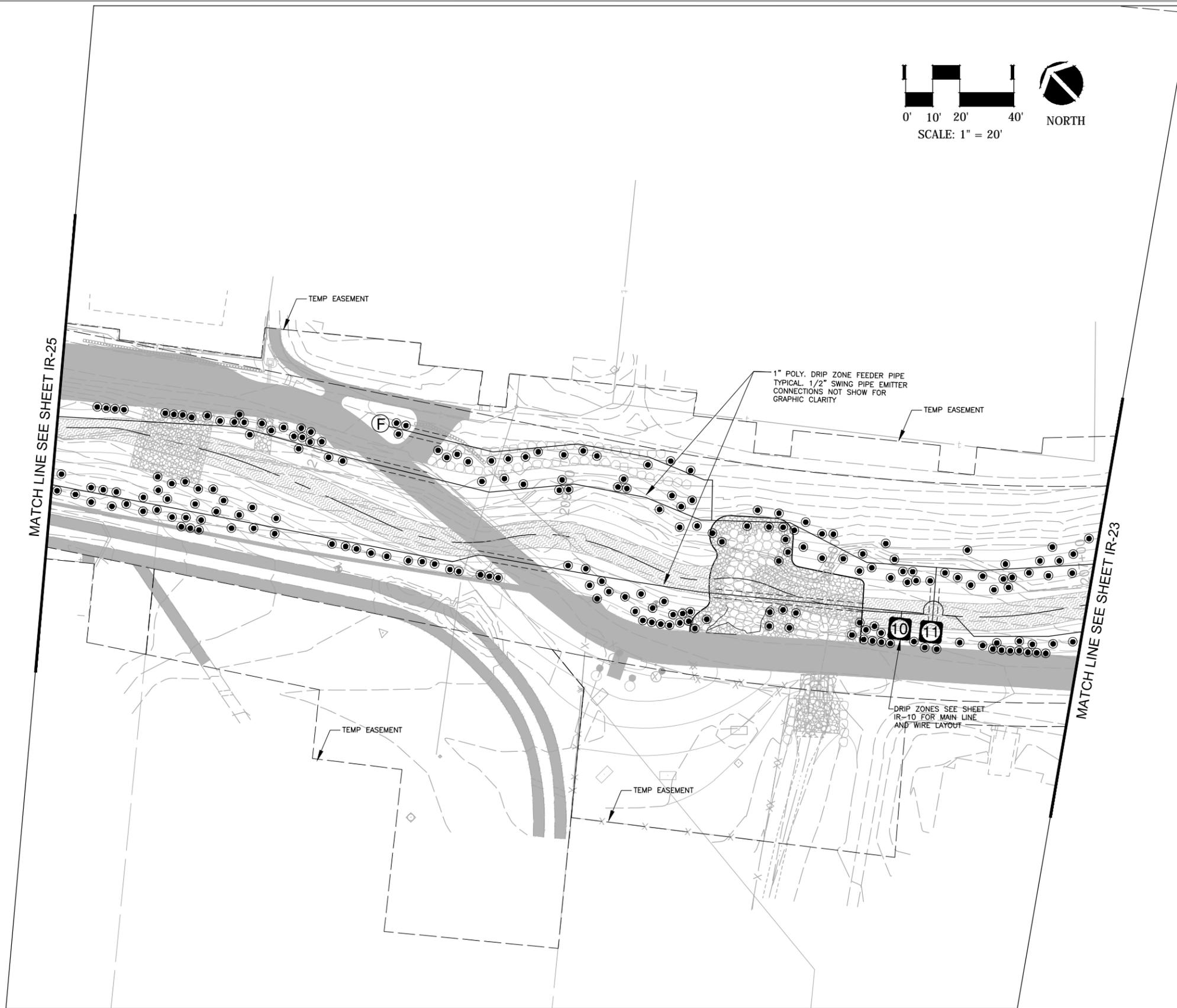
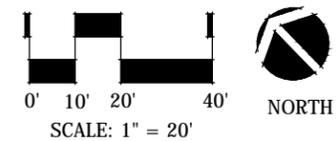
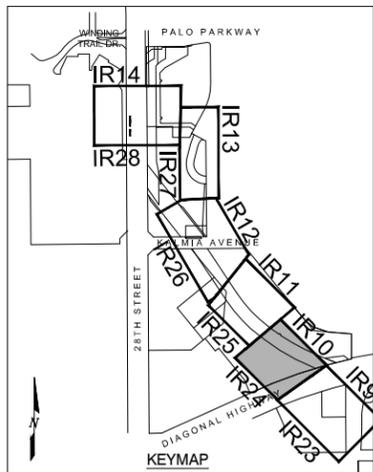


Sheet Revisions		
Date:	Comments	Init.



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DRIP IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-23

Project No./Code	STM 110-081
	18405
Sheet Number:	409



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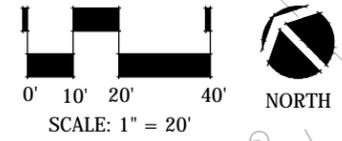
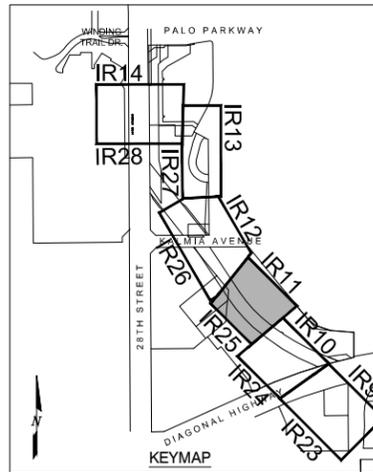
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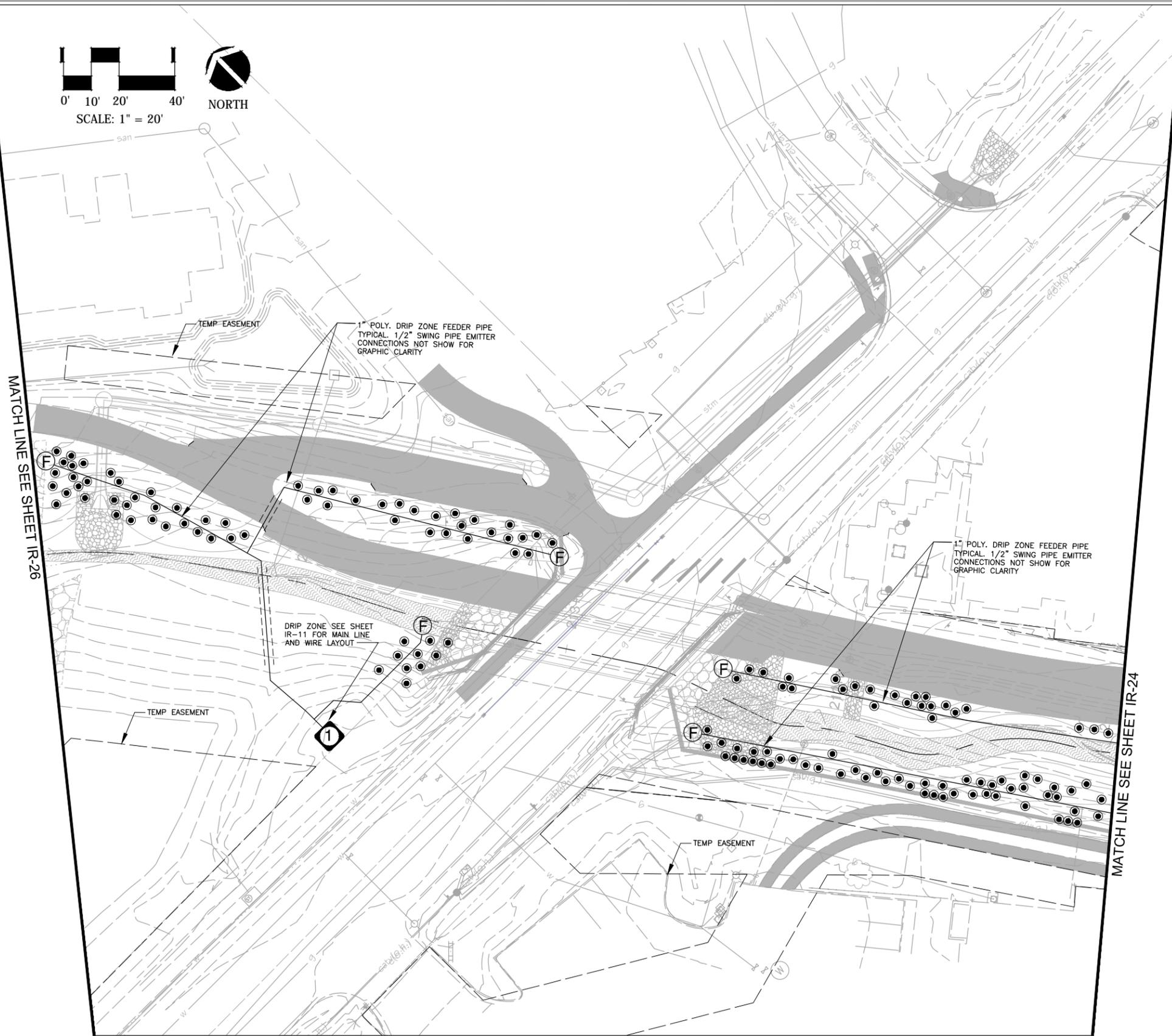
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Date:	Comments	Init.

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
DRIP IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-24

Project No./Code	STM 110-081
	18405
Sheet Number:	410



MATCH LINE SEE SHEET IR-26



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 (303) 841-7077
 Fax - 841-8191



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NAME: P:\114398.11_Wonderland Creek - Dig Hwy to Winding Trail\CAD\Drawings\11039.11_Drainage Plans.dwg DATE: JUN 30, 2014 TIME: 1:52 PM

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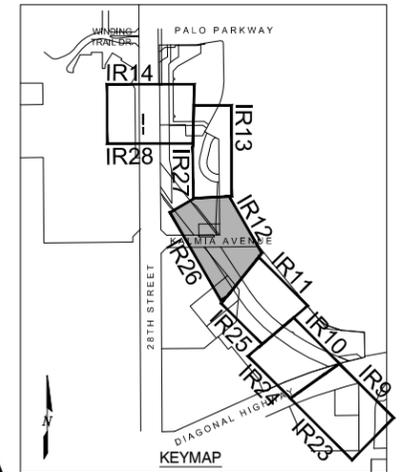
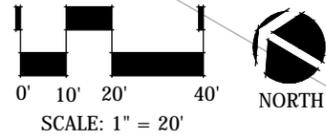


Sheet Revisions		
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Region 4

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
DRIP IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-25

Project No./Code	STM 110-081
	18405
Sheet Number:	411



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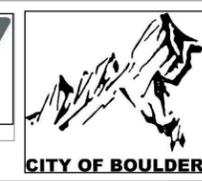
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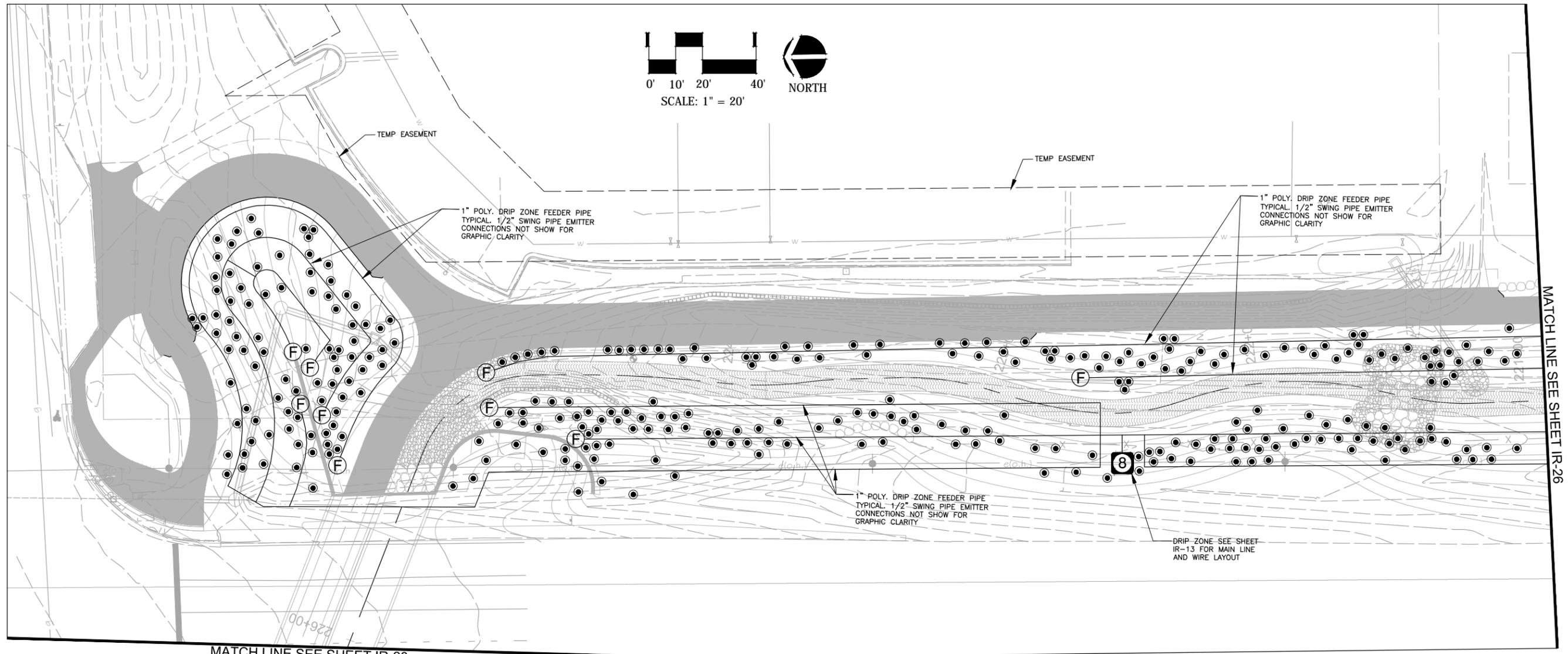
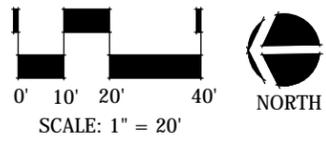


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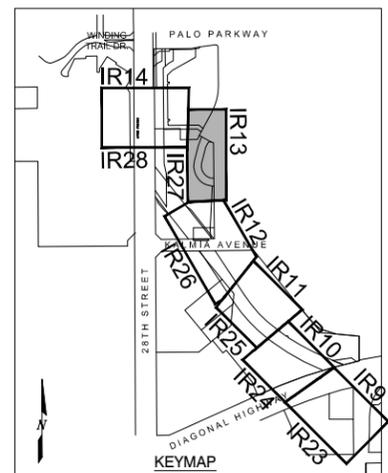
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DRIP IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-26

Project No./Code	STM 110-081
	18405
Sheet Number:	412



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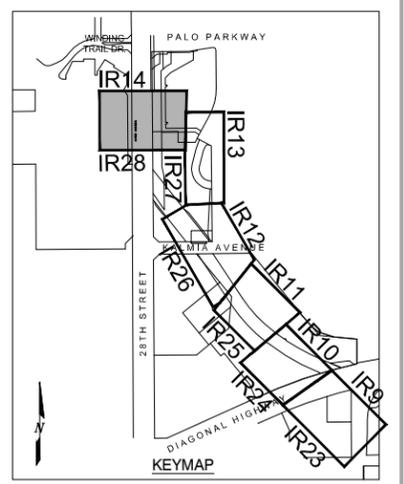
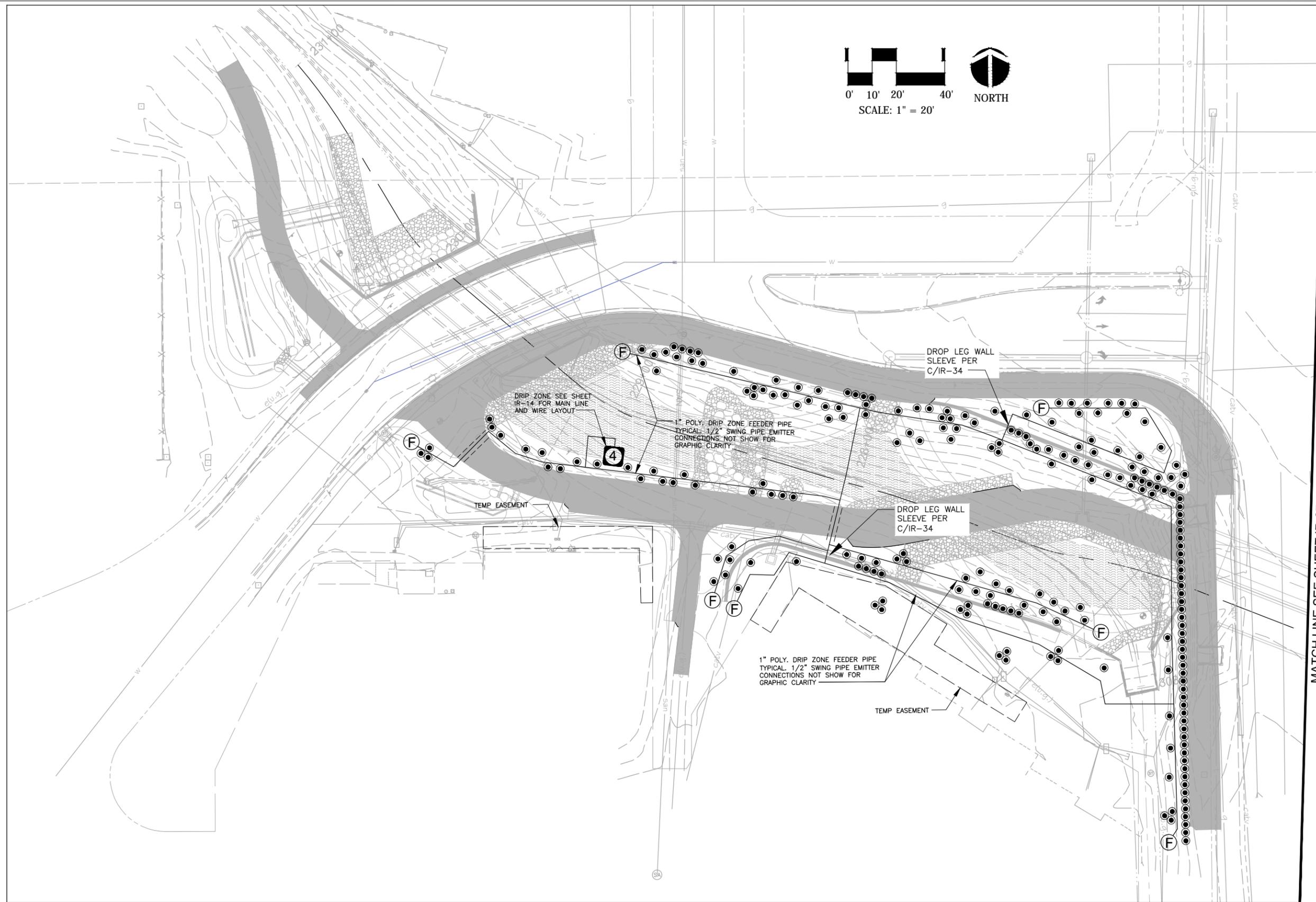


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Region 4

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
DRIP IRRIGATION LAYOUT PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-27

Project No./Code	STM 110-081
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Date:	Comments	Init.																											

NAME: C:\Users\Mike_Holweger\Documents\AA-PROJECT-F-FILES\WONDERLAND CREEK\AA-PROJECT-F-FILES\WONDERLAND CREEK\Lower Reach Base 02-13-15\downstream set 10-28-14\Lower Reach Irr CDs 06-19-15.dwg DATE: 6/18/2015 10:42:53 AM

NEW IRRIGATION EQUIPMENT LEGEND:	
Symbol:	Description:
	NEW 1.5" IRRIGATION WATER METER INSTALLED PER WATER SUPPLY POINT OF CONNECTION NOTES SHEET IR-29 (SIX REQUIRED).
	NEW 2" CAST IRON BODIED, RESILIENT SEAT, SQUARE NUT OPERATED, R.T. BY R.T., MAINLINE ISOLATION VALVE MATCO NORCA, 10-RT OR APPROVED EQUAL. INSTALLED PER DETAIL E/IR-33.
	NEW AY McDONALD 6101 BALL PATTERN, SLOTTED TOP DRAIN VALVE 3/4" INSTALLED IN PER DETAIL D/IR-31.
	NEW 1.5" FEBCO 825YA HIGH HAZARD, REDUCED PRESSURE BACK FLOW ASSEMBLY WITH ENCLOSURE AND SLAB INSTALLED IN PER DETAIL A/IR-32.
	NEW BUCKNER Q44LRCAR10 STABILIZED QUICK COUPLER VALVE WITH MATCHING KEY AND HOSE SWIVEL, 1". INSTALLED PER DETAIL C/IR-31.
	NEW 2", GLOBE PATTERN, FIPT BY FIPT, BERMAD 920WM-55-P, NORMALLY CLOSED, PRESSURE REDUCING HYDROMETER WITH DOWN STREAM PRESSURE SET AT 85 PSI AND 1 PULSE PER 10 GALLONS READ SWITCH. INSTALL TWO WIRE CABLE WITH DECODER TO ENERGIZE VALVE AND RAIN MASTER DATA CABLE EV-CAB-SEN PE-39 FROM MASTER VALVE UP AND INTO CONTROLLER. PROVIDE TEN CLEAR DIAMETERS UPSTREAM AND TEN CLEAR DIAMETERS DOWNSTREAM OF MASTER VALVE. INSTALLED PER DETAIL D/IR-33.
	NEW HUNTER ICV-G-FS-AS-(30 OR 50) SERIES ELECTRIC CONTROL VALVE. SEE IRRIGATION EQUIPMENT SCHEDULE SHEET IR-30 FOR SIZE. INSTALLED PER DETAIL E/IR-31 FOR SPRAY ZONES AND F/IR-31 FOR DRIP ZONES. WITH RAIN MASTER EAGLE I-CENTRAL DECODERS TW-D-1 ONE PER VALVE.
	INSTALL ONE HUNTER WIRELESS RAIN CLICK ON LIGHT POLE LOCATED WITHIN 200 LIN. FT. OF EACH CONTROLLER. SENSOR TO BE SECURED TO LIGHT POLE AT 12' ABOVE GRADE. INSTALLED PER DETAIL D/IR-32. RAIN SENSOR SYMBOL NOT SHOWN ON LAYOUT PLAN.
	RAIN MASTER EAGLE I-CENTRAL MODEL EGP-TWI-PSB TWO WIRE COMPATIBLE CONTROLLERS WITH STRONG BOX FLIP TOP PEDESTAL ENCLOSURES (SIX REQUIRED). CONTRACTOR TO COORDINATE 120V 20A ELECTRICAL SERVICE INSTALLATION WITH ELECTRICAL CONTRACTOR ON SITE. INSTALLED PER DETAIL B/IR-32. INSTALL RAIN MASTER TWO WIRE LIGHTNING ARRESTORS TW-LA-1 EVERY 500' OF TWO WIRE CABLE OR EVERY 10 ZONES.
	NEW SDR-21, CL-200 P.V.C. - B.E. MAINLINE PIPE INSTALLED 18" DEEP. WITH SCHEDULE 40 SLIP BY SLIP AND SCHEDULE 80 M.I.P. AND F.I.P. FITTINGS. MAINLINE PIPE IS 2" TYP. THROUGHOUT. INSTALLED PER TRENCHING DETAIL B/IR-33 AND THRUST BLOCK CONFIGURATION DETAIL C/IR-32.
	NEW JM EAGLE HIGH DENSITY PE-3408, SIDR-15, 100 PSI, POLYETHYLENE SECONDARY PIPE INSTALLED 12" DEEP. WITH PLASTIC INSERT FITTINGS MEETING ASTM D-2609 AND ASTM D-1784. DOUBLE CLAMP ALL PIPE TO FITTING JOINTS THROUGHOUT WITH ALL STAINLESS STEEL BAND CLAMPS. SECONDARY PIPE IS SIZED ON DRAWING, ALL UNSIZED PIPE IS 1". INSTALLED PER DETAIL B/IR-33.
	NEW S.I.D.R.-11.5 H.D.P.E. PIPE AND OR WIRE SLEEVE INSTALLED VIA DIRECTIONAL BORING UNDER EXISTING PAVEMENT TO REMAIN AND CL-200 P.V.C. PIPE AND OR WIRE SLEEVE INSTALLED BY OPEN TRENCHING UNDER PROPOSED PAVEMENT. INSTALLED PER DETAIL A/IR-33.
	TWO WIRE PATH VALVE CONTROL WIRE CONDUCTOR CONFORMING TO ASTM 33 WITH 4/64" THICK PVC INSULATION CONFORMING TO UL STANDARD #493 UF (UNDERGROUND FEEDER) RATED AT 60 DEGREES CENTIGRADE. TWO WIRE INSULATED CONDUCTORS LAID PARALLEL AND ENCASED IN A SINGLE OUTER JACKET OF 3/64" THICK HIGH DENSITY SUNLIGHT RESISTANT POLYETHYLENE CONFORMING TO ICSA S-61-402 AND NEMA WC5 HAVING A MINIMUM WALL THICKNESS OF .045", (COLOR TO BE DETERMINED BY OWNER) COLEMAN CABLE #51452, 14 AWG, PAIGE #P70320D, 14/2 AND REGENCY 14/2 "MAXI CABLE" (SOFT DRAWN COPPER CONDUCTOR CONFORMING TO ASTM 33 14 AWG). ALL WIRE CONNECTIONS TO BE MADE UP WITH 3M DBY AND DBR SPLICE KITS. INSTALL ONE DECODER TW-D-1 FOR EACH ELECTRIC CONTROL VALVE. INSTALL LIGHTNING ARRESTORS EVERY 500 LIN. FT. ALONG TWO WIRE PATH OR BETWEEN EVERY 10 CONTROL VALVES. ARRESTORS AND ALL WIRE SPLICE CONNECTIONS TO BE LOCATED IN VALVE BOX. ATTACHED ARRESTOR WIRE TO #6 BARE COPPER GROUNDING WIRE RUN AND CONNECTED TO A 5/8" BY 8" COPPER GROUND ROD PAIGE #182000 LOCATED 12' AWAY FROM ARRESTOR. GROUND ROD TO BE INSTALLED IN A CARSON IND. 910-10 10" ROUND VALVE BOX WITH BOLT DOWN TEE COVER BRANDED WS. GROUND WIRE TO BE INSTALLED 12" DEEP MINIMUM. CAD-WELD ALL GROUND ROD CONNECTIONS.
	NEW RAIN BIRD 1806 SERIES SAM PRS POP-UP SPRAY HEAD WITH MPR PLASTIC NOZZLES. SEE IRRIGATION EQUIPMENT SCHEDULE ON SHEET IR30 FOR NOZZLE SPECIFICATION. INSTALLED PER DETAIL A/IR-31.
	NEW HUNTER PGP ULTRA GEAR DRIVE ROTARY SPRINKLER HEAD WITH 4" PLASTIC RISER AND 3.0 STANDARD ANGLE OR 1.5 (SR) SHORT RADIUS NOZZLES. SEE IRRIGATION EQUIPMENT SCHEDULE SHEET IR-30 FOR NOZZLE SPECIFICATION. INSTALLED PER DETAIL B/IR-31.
	NEW DRIP EMITTER POLY FEEDER PIPE FLUSH VALVE INSTALLED AT THE END OF EACH DRIP EMITTER LINE FOR WINTERIZATION. INSTALL VALVE BOXES A MINIMUM OF 18" FROM ANY CURB OR PAVEMENT. INSTALLED PER DETAIL B/IR-34.
	NEW RAIN BIRD XBT-20 DRIP EMITTER WITH 1/2" F.I.P.T. INLET. ONE PER CONTAINERIZED SHRUB OR MULTI STEM TREE INSTALLED AT THE EDGE OF THE ROOT BALL JUST INSIDE THE WATERING BERM ON THE UPHILL SIDE OF THE PLANT AND THREE PER BALLED AND BURLAP TREE INSTALLED AT THE EDGE OF THE ROOT BALL JUST INSIDE THE WATERING BERM EVENLY SPACED AT 120 DEGREE INTERVALS AROUND THE PERIMETER OF THE ROOT BALL WITH TWO EMITTERS ON THE UPHILL SIDE OF THE TREE. INSTALLED PER DETAIL A/IR-34. (SWING PIPE EMITTED WAS FROM LAYOUT PLAN FOR GRAPHIC CLARITY)

EXISTING CONDITIONS DOCUMENTATION NOTE:

CONTRACTOR TO PHOTOGRAPHICALLY DOCUMENT THE EXISTING CONDITION OF ALL IMPROVEMENTS WITHIN LIMIT OF WORK AND REVIEW CONDITION WITH OWNER PRIOR TO MOBILIZATION. CONTRACTOR TO PHYSICALLY CONFIRM THE EXISTING STATIC WATER PRESSURE AT EACH POINT OF CONNECTION AND CONFIRM SAME IN WRITING TO OWNER PRIOR TO ORDERING ANY MATERIAL OR SITE MOBILIZATION. IF CONTRACTOR FAILS TO TEST AND CONFIRM EXISTING STATIC PRESSURE PRIOR TO ORDERING IRRIGATION MATERIAL OR SITE MOBILIZATION, CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY AND ALL COSTS REQUIRED TO MAKE SYSTEM OPERATIONAL AND ALL COSTS TO REPLACE ANY DAMAGED LANDSCAPED MATERIAL. RESPONSIBILITY SHALL INCLUDE ALL MATERIAL COSTS, LABOR COSTS, DESIGN COSTS AND PLANT REPLACEMENT COSTS.

GENERAL INSTALLATION NOTES:

THE IRRIGATION CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE SPECIFICATIONS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION. THE IRRIGATION CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF BOTH PUBLIC AND PRIVATE UTILITIES AND ELECTRICAL WIRING PRIOR TO CONSTRUCTION. THE IRRIGATION CONTRACTOR SHALL NOT INSTALL THE SPRINKLER SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. OR IF DISCREPANCIES IN CONSTRUCTION DETAILS, LEGENDS, NOTES, OR SPECIFICATIONS ARE DISCOVERED. ALL SUCH OBSTRUCTIONS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER. THE DRAWINGS ARE DIAGRAMMATIC. IN SOME CASES, IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE OF PLANTING AREAS FOR CLARITY. THE IRRIGATION CONTRACTOR SHALL AVOID ANY CONFLICTS BETWEEN IRRIGATION SYSTEM PIPE ALIGNMENT, IRRIGATION COMPONENT LOCATIONS AND PLANT MATERIALS. THE IRRIGATION CONTRACTOR SHALL ADJUST NOZZLES FOR SPRAY HEADS TO PROVIDE COMPLETE AND ADEQUATE COVERAGE WITH A MINIMUM OF OVER SPRAY FOR THE SITE CONDITIONS.

TRUCK WATERING NOTE:

THE IRRIGATION CONTRACTOR SHALL TRUCK WATER ALL TREES TO REMAIN THROUGHOUT THE ENTIRE IMPROVEMENT AREA INCLUDING SURFACE APPLICATION OF TEN GALLONS OF WATER FOR EVERY ONE INCH OF TRUNK CALIPER EVENLY DISTRIBUTED THROUGHOUT THE DRIP LINE / ROOT ZONE FOR EACH TREE TO REMAIN. TRUCK WATERING OPERATIONS WILL BE AS DIRECTED BY THE OWNER. ASSUME FOR THE PURPOSE OF BIDDING THAT THREE TRUCK WATERING OPERATIONS WILL BE REQUIRED.

TREE PROTECTION NOTE:

TREE SYMBOLS ARE REPRESENTED ON PLAN AT APPROXIMATE SCALE. ALL AREAS WITHIN THE DRIP LINE OF EXISTING HIGH VALUE TREES IDENTIFIED TO REMAIN ARE DEFINED AS CRITICAL ROOT ZONE. ANY AND ALL CONSTRUCTION OPERATIONS (SPECIFICALLY EXCAVATION, BACKFILL AND COMPACTION) WITHIN THE DRIP LINE / CRITICAL ROOT ZONE OF ANY EXISTING TREE TO REMAIN MUST BE DONE IN CONFORMANCE WITH THE CITY AND COUNTY OF DENVER, CITY FORESTER'S STANDARD TREE RETENTION AND PROTECTION SPECIFICATION WHICH IS MADE PART OF THESE CONSTRUCTION REQUIREMENTS BY REFERENCE. PRIOR TO MOBILIZATION, CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION TREE PROTECTION INSPECTION WITH PROJECT MANAGER AND REPRESENTATIVES OF THE CITY FORESTRY DEPARTMENT. ERECT AT THE DIRECTION OF THE CITY FORESTER, MAINTAIN DAILY AND REMOVE AT PROJECT COMPLETION 48" HIGH ORANGE PLASTIC TREE PROTECTION FENCE SECURED TO 6" STEEL T-POSTS SET ON 6' CTRS. MAX. TOP OF FENCE FABRIC TO EQUAL TOP OF POST. BOTTOM OF FENCE FABRIC TO BE FLUSH WITH GROUND. SECURE FENCE FABRIC TO POSTS WITH THREE NYLON LOCK TIES PER POST.

SITE CONDITIONS - HAND DIGGING REQUIREMENT:

CONTRACTOR IS RESPONSIBLE FOR THOROUGHLY REVIEWING THE IRRIGATION LAYOUT AND INSTALLATION DETAIL PLANS AND INSPECTING THE AREAS WHERE IRRIGATION IS TO BE INSTALLED TO FULLY AND COMPLETELY TAKE INTO CONSIDERATION ALL AREAS WHERE EQUIPMENT ACCESS IS LIMITED AND EXCAVATION, BACKFILL AND COMPACTION OF IRRIGATION TRENCHES AND RELATED EXCAVATIONS WILL NEED TO BE DONE BY HAND AND TAKE SAME INTO CONSIDERATION DURING BIDDING.

GRADE ADJUSTMENT NOTE:

CONTRACTOR IS RESPONSIBLE FOR IMPORTING CLEAN, FRIABLE, SANDY LOAM TOPSOIL IN CONFORMANCE WITH SPECIFICATIONS TO ADJUST BACKFILLED TRENCHES AND EXCAVATIONS TO GRADE. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF ANY EXCESS SOIL OFF SITE IN CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.

LIMIT OF WORK / MOBILIZATION AND ACCESS:

SEE CIVIL AND LANDSCAPE PLANS FOR THE LIMIT OF WORK AREA ON SITE. ALL CONSTRUCTION OPERATIONS INCLUDING MOBILIZATION AND EQUIPMENT AND MATERIAL STORAGE ARE TO TAKE PLACE WITHIN THE LIMIT OF WORK LINE AT LOCATIONS APPROVED IN ADVANCE BY THE OWNER. PARKING OF PERSONAL VEHICLES WITHIN THE LIMIT OF WORK LINE IS PROHIBITED. ALL CONSTRUCTION ACCESS IS TO TAKE PLACE AT A LOCATION REVIEWED AND APPROVED IN ADVANCE BY THE OWNER. NO CONSTRUCTION ACCESS WILL BE ALLOWED EXCEPT AT DESIGNATED LOCATIONS.

EXISTING PRIVATE IRRIGATION RENOVATION NOTE:

CONTRACTOR IS RESPONSIBLE FOR THE REPAIR/RESTORATION OF ALL EXISTING PRIVATE IRRIGATION SYSTEMS LOCATED ALONG THE PERIMETER OF THE IMPROVEMENT AREA AND IDENTIFIED ON PLAN AS COMPLETE AND IN PLACE SELF-CONTAINED AND FULLY OPERATIONAL, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1) ALL COORDINATION WITH PRIVATE PROPERTY OWNER, PROPERTY MANAGER OR PROPERTY MANAGEMENT COMPANY.
- 2) ALL COORDINATION WITH PRIVATE PROPERTY MAINTENANCE CONTRACTOR.
- 3) RUN TEST OF EXISTING SYSTEMS PRIOR TO CONSTRUCTION.
- 4) DOCUMENTATION OF EXISTING SYSTEM CONFIGURATION, COVERAGE AND OPERATION AND CONDITION.
- 5) SALVAGE OF EXISTING IRRIGATION EQUIPMENT TO BE REINSTALLED.
- 6) CUTTING AND CAPPING OF EXISTING SYSTEM TO MAINTAIN MAXIMUM SYSTEM OPERABILITY DURING CONSTRUCTION.
- 7) COORDINATION OF PRIVATE CONTROLLER PROGRAMMING TO INSURE PROPER MAINTENANCE OF EXISTING PRIVATE LANDSCAPE IMPROVEMENTS TO REMAIN, AS WELL AS TO PROTECT NEW CONSTRUCTION FROM DAMAGE DUE TO EXCESSIVE RUN OFF OR FLOODING FROM PERIMETER IRRIGATION SYSTEMS REMAINING OPERATIONAL DURING CONSTRUCTION.
- 8) REINSTALLATION OF SALVAGED EQUIPMENT AND REPLACEMENT OF REMOVED IRRIGATION EQUIPMENT INCLUDING, PIPES, WIRE, VALVES, VALVE BOXES HEADS AND ALL MISCELLANEOUS FITTINGS AND CONNECTORS AS REQUIRED TO REINSTALL THE PRIVATE SYSTEM TO PROVIDE FULL AND COMPLETE COVERAGE OF ALL IRRIGATED AREAS TO MEET OR EXCEED EXISTING SYSTEM FUNCTIONALITY.
- 9) ALL EXCAVATION, BACKFILL AND COMPACTION AS REQUIRED.
- 10) ALL TESTING, FLUSHING, NOZZLING ADJUSTING AND CONTROLLER PROGRAMMING AS REQUIRED TO RESTORE EXISTING PRIVATE SYSTEMS TO MATCH EXISTING.

NEW WATER SUPPLY POINT OF CONNECTION INSTALLATION NOTES:

ALL WORK IS TO BE PERFORMED IN STRICT CONFORMANCE WITH ALL CITY OF BOULDER PUBLIC WORKS, TRANSPORTATION ENGINEERING, AND WATER DEPARTMENT STANDARDS AND SPECIFICATIONS LATEST EDITION.

NEW 1.5" IRRIGATION WATER TAPS ARE TO BE INSTALLED COMPLETE AND IN PLACE INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1) SAW CUT, REMOVAL AND REPLACEMENT (TO MATCH EXISTING) OF EXISTING CONCRETE OR ASPHALT PAVEMENT AND EXCAVATION AS REQUIRED TO EXPOSE THE EXISTING WATER MAINS AND INSTALL NEW TAPPING SADDLES, CORPORATION STOPS, SERVICE LINES, CURB STOP VALVES AND WATER METER VAULTS.
- 2) INSTALLATION OF TAPPING SADDLES, 1.5" CORPORATION STOPS, 1.5" TYPE-K COPPER SERVICE LINES WITH ALL SILVER SOLDERED FITTINGS FROM CORPORATION STOPS THROUGH DISCHARGE SIDE OF WATER METERS, INSTALLATION OF 1.5" CURB STOP VALVES WITH ACCESS STACKS, INSTALLATION OF 1.5" WATER METERS WITH VAULTS, BYPASS MANIFOLD, PIPE SUPPORTS, ISOLATION VALVES, MANHOLE RIM AND COVER AS REQUIRED FOR INSTALLATION OF REMOTE READING DEVICE. INCLUDING ALL MISCELLANEOUS CONNECTORS, FITTINGS AND RESTRAINT.
- 3) ALL BACKFILL (INCLUDING FLOW FILL IF REQUIRED), COMPACTION AND SURFACE RESTORATION TO MATCH EXISTING INCLUDING RESTORATION OF ANY LANDSCAPE OR IRRIGATION SYSTEM IMPROVEMENTS DISTURBED DURING EXCAVATION. ALL VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL AS REQUIRED INCLUDING A TRAFFIC CONTROL PLAN REVIEWED AND APPROVED BY THE CITY OF BOULDER, TRANSPORTATION ENGINEERING DIVISION.
- 4) ALL UTILITY PROVIDER COORDINATION INCLUDING ALL METER PURCHASE, METER CALIBRATION AND WET TAP LABOR COSTS AND ASSOCIATED FEES. COORDINATE NEW TAP INSTALLATION WITH UTILITY PROVIDER WATER SALES DEPARTMENT AND WITH UTILITY PROVIDER METER INSPECTIONS DIVISION.
- 5) ALL WORK ON THE POTABLE SERVICE IS TO BE PERFORMED BY A PLUMBER LICENSED IN THE CITY OF BOULDER AND APPROVED BY THE UTILITY PROVIDER. PULL AND PAY FOR ALL REQUIRED PERMITS AND CALL FOR AND PAY FOR ALL REQUIRED INSPECTIONS.
- 6) ALL SYSTEM DEVELOPMENT FEES FOR THE NEW 1.5" IRRIGATION WATER TAPS HAVE BEEN PAID BY THE OWNER. CONTRACTOR TO PAY ANY AND ALL WET TAP, METER PURCHASE, METER CALIBRATION, METER SETTING AND INSPECTION FEES. CONFIRM REQUIRED FEES PRIOR TO SUBMITTING BID.
- 7) ALL WORK IS TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF AND IS TO BE INSPECTED BY CITY OF BOULDER WATER DEPARTMENT METER INSPECTORS.

NEW POWER SUPPLY POINT OF CONNECTION INSTALLATION NOTES:

ALL WORK IS TO BE PERFORMED IN STRICT CONFORMANCE WITH ALL CITY OF BOULDER BUILDING DEPARTMENT ELECTRICAL INSPECTIONS DIVISION AND THE NATIONAL ELECTRICAL CODE STANDARDS AND SPECIFICATIONS LATEST EDITION.

NEW 120V 20A ELECTRICAL SERVICES (SIX REQUIRED) ARE TO BE INSTALLED COMPLETE AND IN PLACE INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1) ALL ELECTRIC METERS, METER SOCKETS, DISTRIBUTION PANELS IF REQUIRED, CONDUIT, CONDUCTOR, FITTINGS, CONNECTORS, PULL BOXES, FOR POWER SOURCE UP AND INTO CONTROLLER ENCLOSURE INCLUDING GFI RECEPTACLE INSTALLATION INSIDE CONTROLLER ENCLOSURES.
- 2) ALL EXCAVATION, BACKFILL, COMPACTION AND SURFACE RESTORATION OF ANY DISTURBED AREAS TO MATCH EXISTING.
- 3) ALL UTILITY PROVIDER COORDINATION AS REQUIRED.
- 4) ALL WORK ON THE ELECTRICAL SERVICE IS TO BE PERFORMED BY AN ELECTRICIAN LICENSED IN THE CITY OF BOULDER AND APPROVED BY THE UTILITY PROVIDER. PULL AND PAY FOR ALL REQUIRED PERMITS AND CALL FOR AND PAY FOR ALL REQUIRED INSPECTIONS.

IRRIGATION DESIGN BY:
Applied Design Services

9721 Bayou Ridge Trail
Parker, Colorado 80134
(303) 841-7077
Fax - 841-8191



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(303) 988-4939



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WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
IRRIGATION LEGEND AND NOTES PLAN	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-29

Project No./Code	STM 110-081
	18405
Sheet Number	415

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IRRIGATION EQUIPMENT SCHEDULE:

City of Boulder - Wonderland Creek:
 New 1.5" irrigation water tap No. 1 located in Talisman Place
 Existing water main: 8" ductile iron pipe
 Existing static water pressure: 134 PSI
 New 24 station controller - C1

VALVE #	ZONE #	CONTROL VALVE	SPRINKLER HEADS	GPM	PSI
1	C-1	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	12.0	50
2	6-2	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	33.0	50
3	C-3	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	21.0	50
4	C-4	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	2.7	30
5	C-5	HUNTER ICV-151G FS-AS-50-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	39.5	30
6	C-6	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	27.0	50
7	C-7	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	3.8	30
8	C-8	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	1.4	30
9	C-9	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	33.0	50
10	C-10	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	30.0	50
11	C-11	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	33.1	30
12	C-12	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	37.7	30
13	C-13	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	24.0	50
14	C-14	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	6.0	50
15	C-15	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	2.5	30
16	C-16	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	27.0	50
17	C-17	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	28.5	30
18	C-18	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	33.1	30
19	C-19	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	33.1	30
20	C-20	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	26.6	30
21	C-21	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	34.0	30
22	C-22	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	5.4	30

IRRIGATION EQUIPMENT SCHEDULE:

City of Boulder - Wonderland Creek:
 New 1.5" irrigation water tap No. 2 located in 34th St. South of Iris Ave.
 Existing water main: 8" ductile iron pipe
 Existing static water pressure: 130 PSI
 New 8 station controller - C2

VALVE #	ZONE #	CONTROL VALVE	SPRINKLER HEADS	GPM	PSI
1	C-1	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	24.0	50
2	6-2	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	6.9	30
3	C-3	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	28.5	50
4	C-4	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	6.3	30
5	C-5	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	39.0	50

IRRIGATION EQUIPMENT SCHEDULE:

City of Boulder - Wonderland Creek:
 New 1.5" irrigation water tap No. 3 located north of Iris Ave. at Chisholm Trail
 Existing water main: 8" ductile iron pipe
 Existing static water pressure: 125 PSI
 New 16 station controller - C3

VALVE #	ZONE #	CONTROL VALVE	SPRINKLER HEADS	GPM	PSI
1	C-1	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.8 MPR NOZZLES	36.9	30
2	6-2	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.8 MPR NOZZLES	27.0	30
3	C-3	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	24.0	50
4	C-4	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	6.0	30
5	C-5	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.8 MPR NOZZLES	34.8	30
6	C-6	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	30.0	50
7	C-7	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	33.0	50
8	C-8	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	18.0	50
9	C-9	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	33.0	50
10	C-10	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	6.8	30

IRRIGATION EQUIPMENT SCHEDULE:

City of Boulder - Wonderland Creek:
 New 1.5" irrigation water tap No. 4 located in Kalmia Ave.
 Existing water main: 8" ductile iron pipe
 Existing static water pressure: 116 PSI
 New 16 station controller - C4

VALVE #	ZONE #	CONTROL VALVE	SPRINKLER HEADS	GPM	PSI
1	C-1	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	2.2	30
2	6-2	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	25.7	30
3	C-3	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.12 MPR NOZZLES	35.1	30
4	C-4	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.12&15 MPR NOZZLES	34.6	30
5	C-5	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.12 MPR NOZZLES	22.1	30
6	C-6	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	34.9	30
7	C-7	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	29.4	30
8	C-8	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	28.5	50
9	C-9	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	12.8	30
10	C-10	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	6.5	30
11	C-11	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	5.0	30
12	C-12	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.12 MPR NOZZLES	42.9	30
13	C-13	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.10 MPR NOZZLES	31.9	30
14	C-14	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	15.0	50
15	C-15	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	1.0	30
16	C-16	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.12 MPR NOZZLES	10.4	30

IRRIGATION EQUIPMENT SCHEDULE:

City of Boulder - Wonderland Creek:
 New 1.5" irrigation water tap No. 5 Palo Parkway and 28th St. Appx.
 Existing water main: 8" PVC
 Existing static water pressure: 104 PSI
 New 16 station controller - C5

VALVE #	ZONE #	CONTROL VALVE	SPRINKLER HEADS	GPM	PSI
1	C-1	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.10&15 MPR NOZZLES	32.8	30
2	6-2	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	6.3	30
3	C-3	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	33.1	30
4	C-4	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.15 MPR NOZZLES	38.6	30
5	C-5	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	21.0	50
6	C-6	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	42.0	50
7	C-7	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	42.0	50
8	C-8	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	10.0	30
9	C-9	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	37.5	50
10	C-10	HUNTER ICV-101G FS-AS-50-1"	HUNTER PGP-04 ULTRA WITH 3.0 STANDARD ANGLE NOZZLE	9.0	50

IRRIGATION EQUIPMENT SCHEDULE:

City of Boulder - Wonderland Creek:
 New 1.5" irrigation water tap No. 6 located in Birchwood Dr.
 Existing water main: 8" ductile iron pipe
 Existing static water pressure: 104 PSI
 New 8 station controller - C6

VALVE #	ZONE #	CONTROL VALVE	SPRINKLER HEADS	GPM	PSI
1	C-1	HUNTER ICV-151G FS-AS-30-1.5"	RAIN BIRD 1806 SAM PRS WITH No.12 MPR NOZZLES	32.5	30
2	6-2	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD 1806 SAM PRS WITH No.12 MPR NOZZLES	11.0	30
3	C-3	HUNTER ICV-151G FS-AS-50-1.5"	HUNTER PGP-04 ULTRA WITH 1.5 SHORT RADIUS NOZZLE	33.0	50
4	C-4	HUNTER ICV-101G FS-AS-30-1"	RAIN BIRD XBT-20 DRIP EMITTERS	7.4	30

IRRIGATION DESIGN BY:
 Applied Design Services
 9721 Bayou Ridge Trail
 Parker, Colorado 80134
 (303) 841-7077
 Fax - 841-8191



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 (303) 988-4939



MEC PROJECT NO. 11039.03



Sheet Revisions

Date:	Comments	Init.



Region 4



CITY OF BOULDER

WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

IRRIGATION LEGEND AND NOTES PLAN

Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-30

Project No./Code

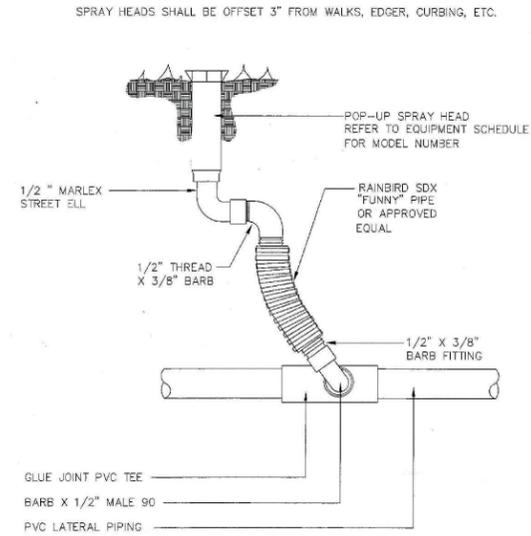
STM 110-081

18405

Sheet Number 416

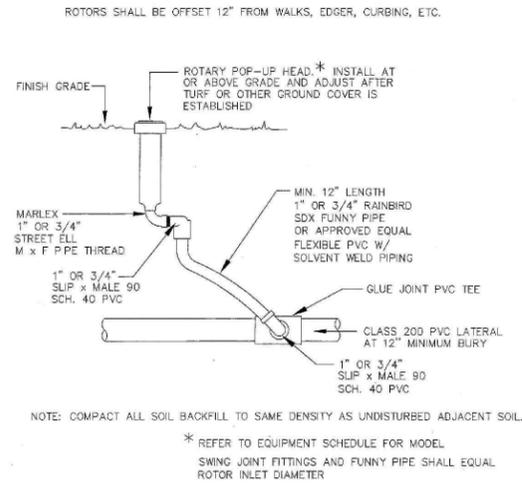
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DETAIL A/IR31



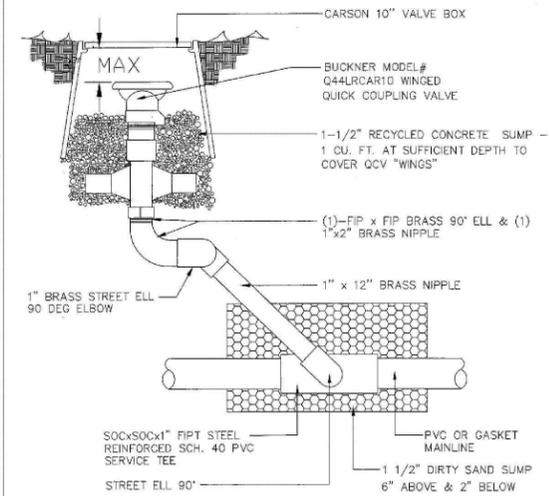
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APPROVED FOR: CITY OF BOULDER PARKS & RECREATION	IRRIGATION SPRAY HEAD	DRAWING NO. 3.32R

DETAIL B/IR31

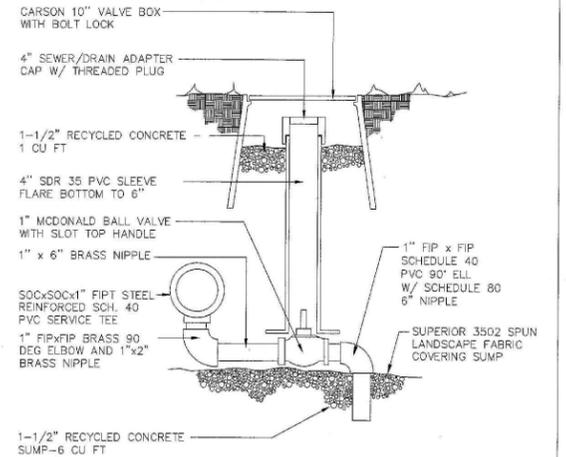


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DETAIL C/IR31

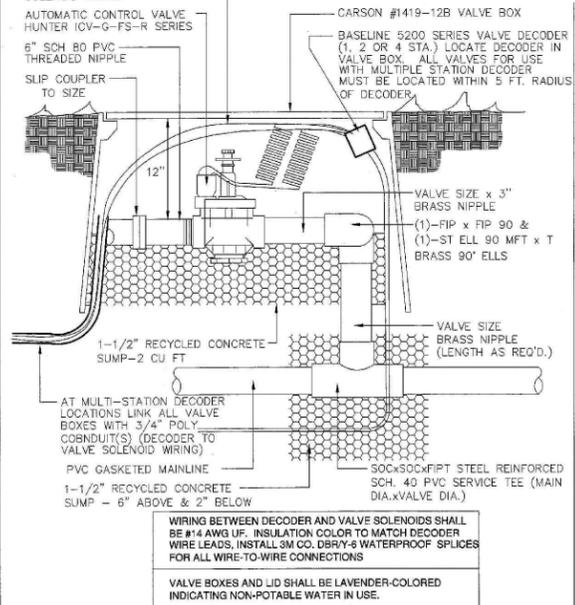


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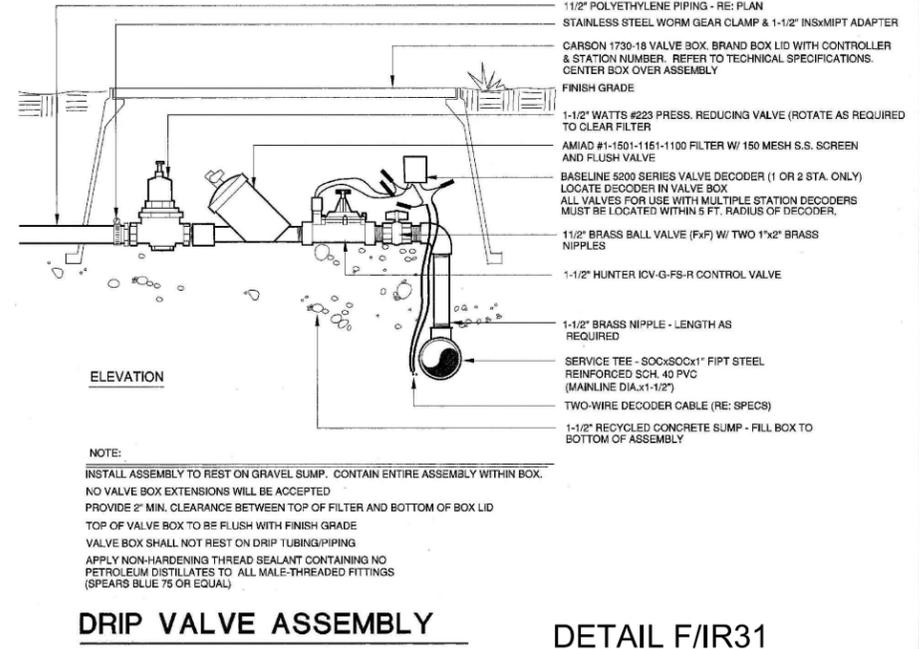


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DETAIL E/IR31



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APPROVED FOR: CITY OF BOULDER PARKS & RECREATION	IRRIGATION CONTROL VALVE W/ BRASS FITTINGS	DRAWING NO. 3.27R



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APPROVED FOR: CITY OF BOULDER PARKS & RECREATION	IRRIGATION DRIP VALVE ASSEMBLY	DRAWING NO. 3.27R

CITY OF BOULDER STANDARD IRRIGATION DETAILS ADJUST AS REQUIRED TO CONFORM WITH WONDERLAND CREEK IRRIGATION EQUIPMENT LEGEND

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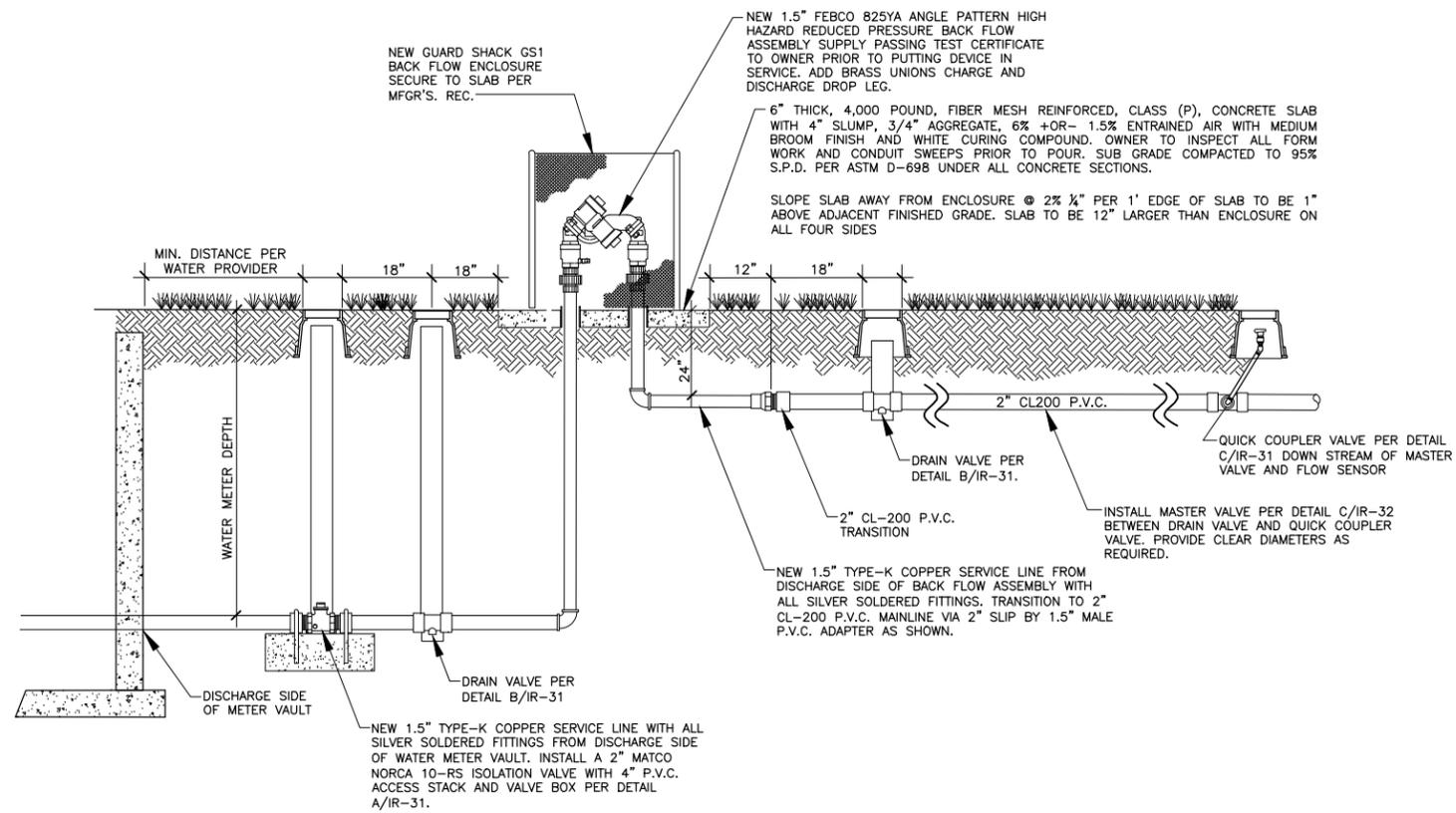
Sheet Revisions

Date:	Comments	Init.

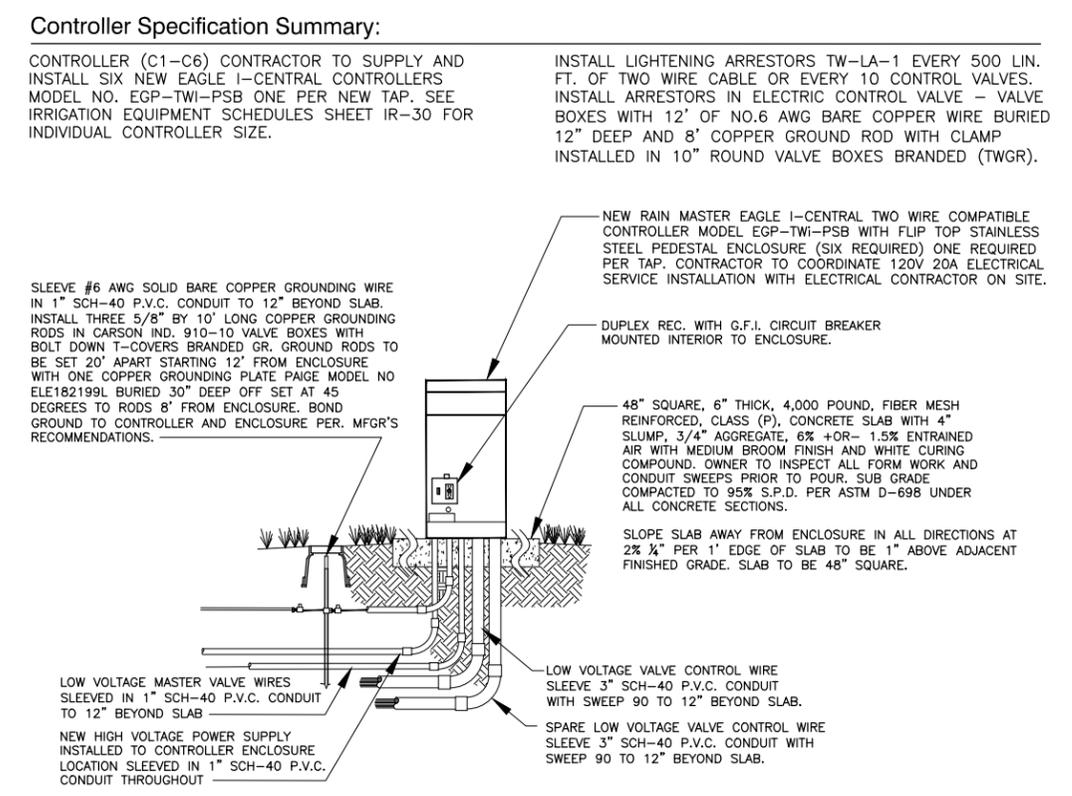
WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT	
IRRIGATION DETAILS	
Designer:	Structure Numbers
Detailer:	Subst Sheets: IR-31
Sheet Subst: Irrigation	

Project No./Code	STM 110-081
	18405
Sheet Number	417

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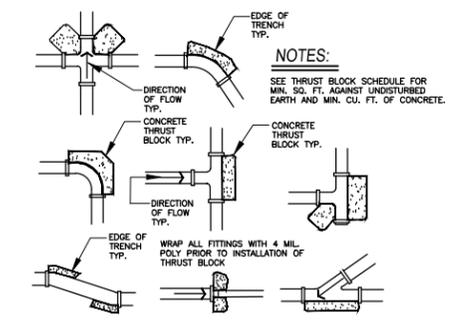
A IRRIGATION SYSTEM POINT OF CONNECTION AND BACK FLOW ASSEMBLY SECTION
 IR-32 NO SCALE



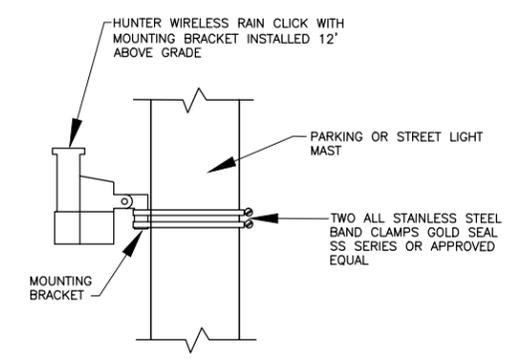
B CONTROLLER AND ENCLOSURE ELEVATION
 IR-32 NO SCALE

MAIN LINE THRUST BLOCK SURFACE AREA AGAINST UNDISTURBED EARTH IN SQ. FT. AND TOTAL CONCRETE VOLUME IN CU. FT. Assumes an estimated soil bearing strength of 1,000 lbs/sq. ft.					
FITTING SIZE	90 DEGREE	45 DEGREE	22.5 DEGREE	11.25 DEGREE	TEE OR CAP
2"	2 SQ. FT. 4 CU. FT.	1 SQ. FT. 2 CU. FT.	1 SQ. FT. 2 CU. FT.	1 SQ. FT. 2 CU. FT.	2 SQ. FT. 4 CU. FT.

INSTALLATION NOTES:
 CONCRETE TO BE 3,500 P.S.I. MIN. INSTALL BOND BREAKER AROUND PIPE AND FITTING PRIOR TO POUR. DO NOT POUR CONCRETE ON TOP OF PIPE.



C MAINLINE THRUST BLOCKING
 IR-32 NO SCALE



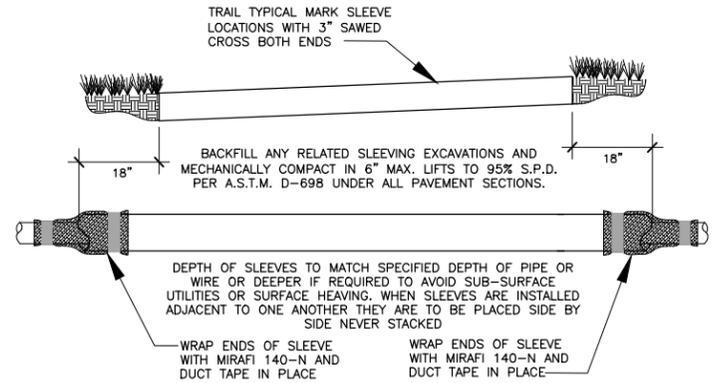
D RAIN SENSOR MOUNTING DETAIL
 IR-32 NO SCALE

Computer File Information Creation Date: _____ Initials: _____ Last Modification Date: _____ Initials: _____ Full Path: _____ Drawing File Name: _____		MULLER ENGINEERING CO., INC. CONSULTING ENGINEERS 777 S. WADSWORTH BLVD. 4-100 LAKEWOOD, COLORADO 80226 (303) 988-4939 		Sheet Revisions Date: _____ Comments: _____ Init: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____		 Region 4		WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT IRRIGATION DETAILS Designer: _____ Structure Numbers: _____ Detailer: _____ Sheet Subset: Irrigation Subset Sheets: IR-32		Project No./Code STM 110-081 18405 Sheet Number: 418	
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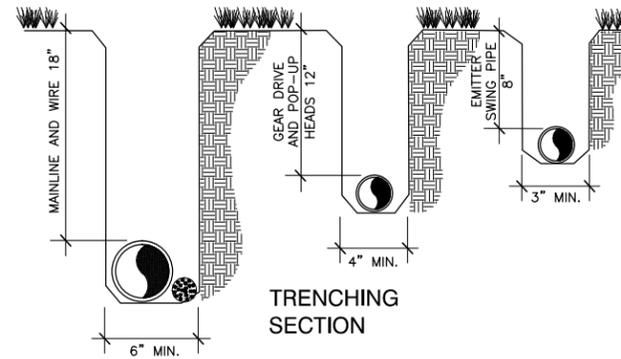
SLEEVING SHALL BE S.I.D.R.-11.5 H.D.P.E. INSTALLED BY DIRECTIONAL BORING UNDER EXISTING ASPHALT OR CONCRETE PAVEMENT IF REQUIRED AND CL-200 P.V.C. INSTALLED BY OPEN TRENCHING UNDER PROPOSED ASPHALT OR CONCRETE PAVEMENT. MAINLINE SLEEVES ARE 4", WIRE SLEEVES ARE 3" AND SECONDARY PIPE SLEEVES ARE 3".

SLEEVING WILL BE MEASURED FROM THE POINT WHERE THE MAINLINE PIPE, SECONDARY PIPE OR WIRE ENTER THE SLEEVE (AT THE SPECIFIED DEPTH) TO THE POINT WHERE THE MAINLINE PIPE, SECONDARY PIPE OR WIRE EXIT THE SLEEVE (AT THE SPECIFIED DEPTH). ANY ADDITIONAL PIPE OR BORING REQUIRED TO ACHIEVE THE SPECIFIED PIPE AND OR WIRE DEPTH AND ANY ADDITIONAL PIPE OR BORING REQUIRED TO RETURN TO THE SURFACE INCLUDING ANY AND ALL PULL PIPE WILL BE CONSIDERED AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE CONTRACT UNIT PRICE FOR SLEEVING AND WILL NOT BE PAID FOR SEPARATELY.

ALL SURFACE RESTORATION (REQUIRED BY BORING AND SLEEVING OPERATIONS) INCLUDING BACKFILL, COMPACTION, FINE GRADE AND SOD PATCH OR NATIVE SEEDING WILL BE CONSIDERED AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE CONTRACT UNIT PRICE FOR SLEEVING AND WILL NOT BE PAID FOR SEPARATELY.

ADJUST SLEEVING DEPTH AS REQUIRED TO AVOID SUBSURFACE UTILITIES AND OR TO AVOID SURFACE HEAVING. ANY ADDITIONAL PIPE OR BORING REQUIRED TO CARRY SLEEVING DEEPER WILL BE CONSIDERED AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE CONTRACT UNIT PRICE FOR SLEEVING AND WILL NOT BE PAID FOR SEPARATELY.

A IRRIGATION SLEEVING
IR-33 NO SCALE



TRENCH DEPTH ARE MINIMUMS WITH A MAXIMUM OVER EXCAVATION OF 2". ALL TRENCHES ARE TO BE CLEANED WITH "CRUMBER" ATTACHMENT OR BY HAND PRIOR TO INSTALLING PIPE PROVIDING A SMOOTH AND UNIFORM BEDDING SURFACE. REMOVE ANY EXPOSED ROCK OR DEBRIS FROM TRENCH BOTTOM OR WALLS PRIOR TO INSTALLING PIPE AND OR WIRE.

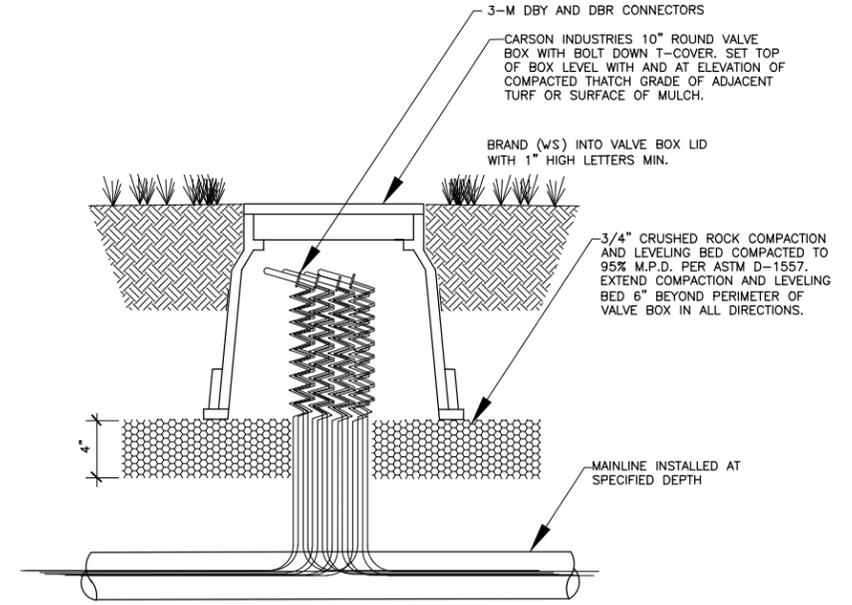
ALL MAINLINE TRENCHES AND RELATED EXCAVATIONS SHALL BE MECHANICALLY COMPACTED IN 9" LIFTS MAXIMUM. TO 90% S.P.D. PER ASTM D-698 IN ALL LANDSCAPE AREAS.

SECONDARY PIPING CAN BE MECHANICALLY OR HYDRAULICALLY COMPACTED IN 12" LIFTS MAXIMUM. TO MATCH THE DENSITY OF ADJACENT UNDISTURBED SOIL.

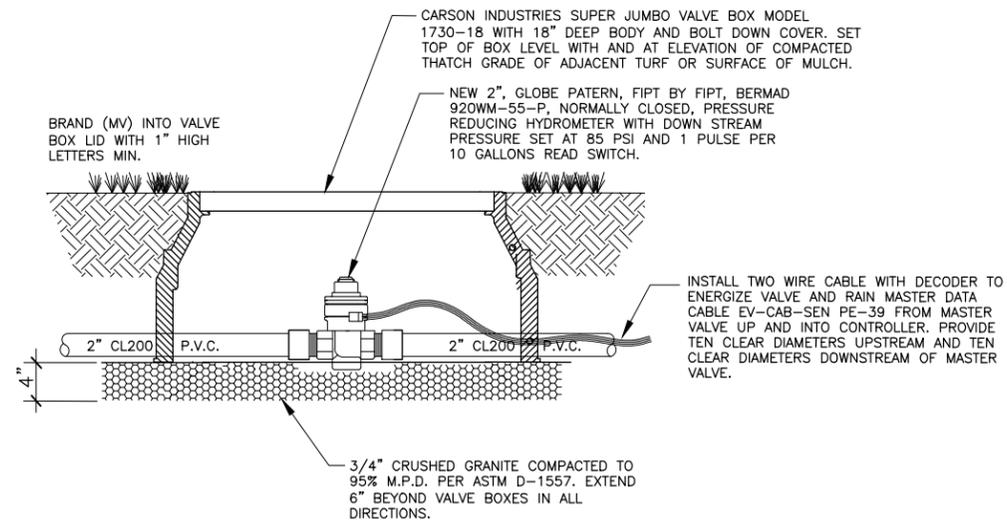
BACKFILL, COMPACTION, FINE GRADE AND SURFACE RESTORATION INCLUDING FINE GRADE AND CLEAN UP MUST BE ONGOING THROUGHOUT CONSTRUCTION. NO MORE THAN THREE SECONDARY ZONES AND 200 LIN. FT. OF MAINLINE TRENCH CAN BE OPENED UP AT ONE TIME. NO ADDITIONAL SECONDARY OR MAINLINE TRENCHING WILL BE AUTHORIZED UNTIL THE BACKFILL, COMPACTION AND RESTORATION OF CURRENTLY OPEN TRENCHES AND RELATED EXCAVATIONS IS IN PROGRESS.

ALL OPEN EXCAVATIONS MUST BE PROTECTED IN CONFORMANCE WITH O.S.H.A. REGULATIONS.

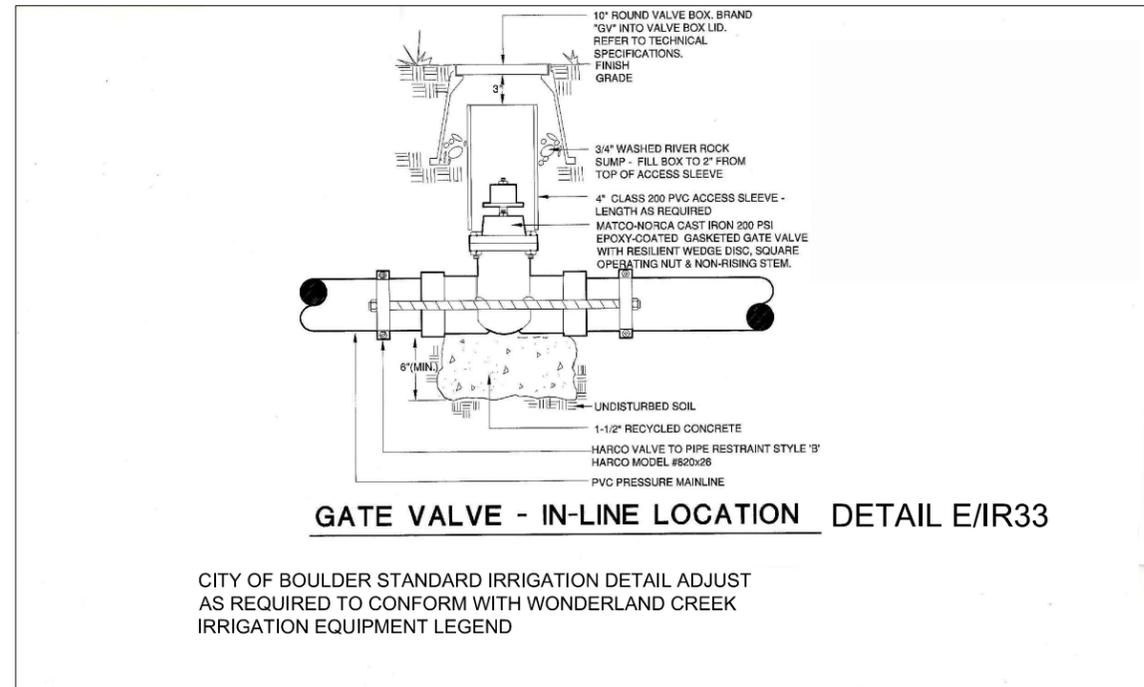
B IRRIGATION TRENCHING
IR-33 NO SCALE



C WIRE SPLICE ACCESS LOOP
IR-33 NO SCALE



D MASTER VALVE ASSEMBLY
IR-33 NO SCALE



E GATE VALVE - IN-LINE LOCATION
CITY OF BOULDER STANDARD IRRIGATION DETAIL ADJUST AS REQUIRED TO CONFORM WITH WONDERLAND CREEK IRRIGATION EQUIPMENT LEGEND

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CONSULTING ENGINEERS
777 S. WADSWORTH BLVD. 4-100
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT NO. 11039.03



Sheet Revisions

Date:	Comments	Init.

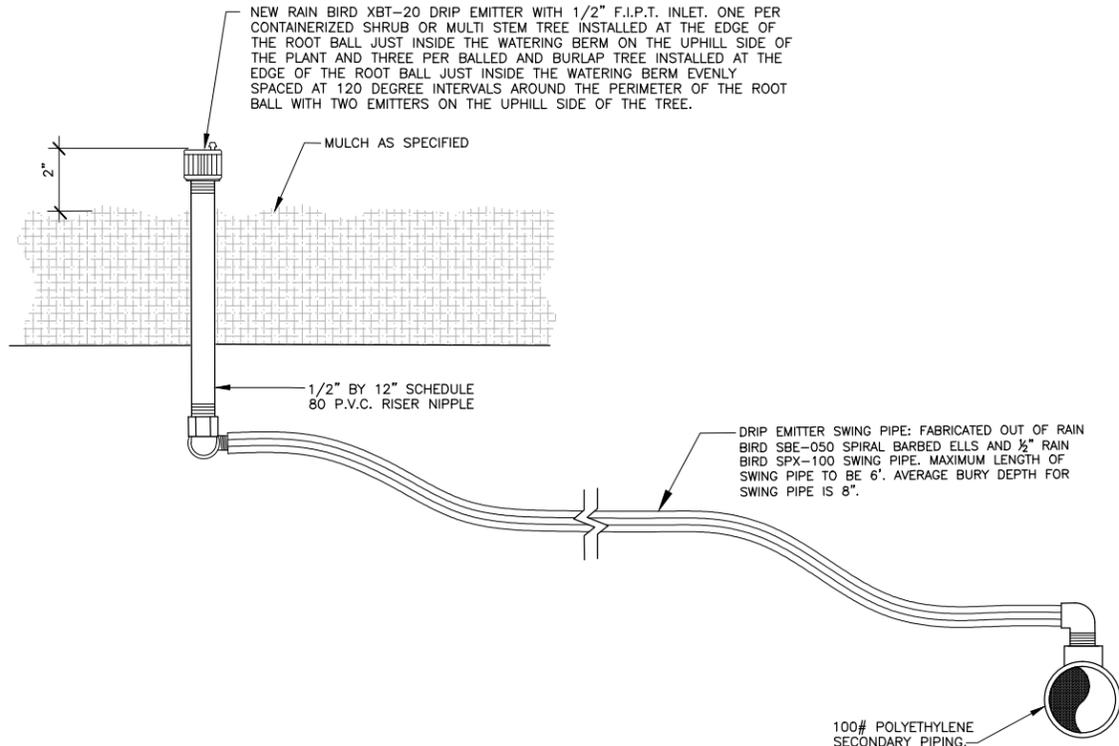


WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

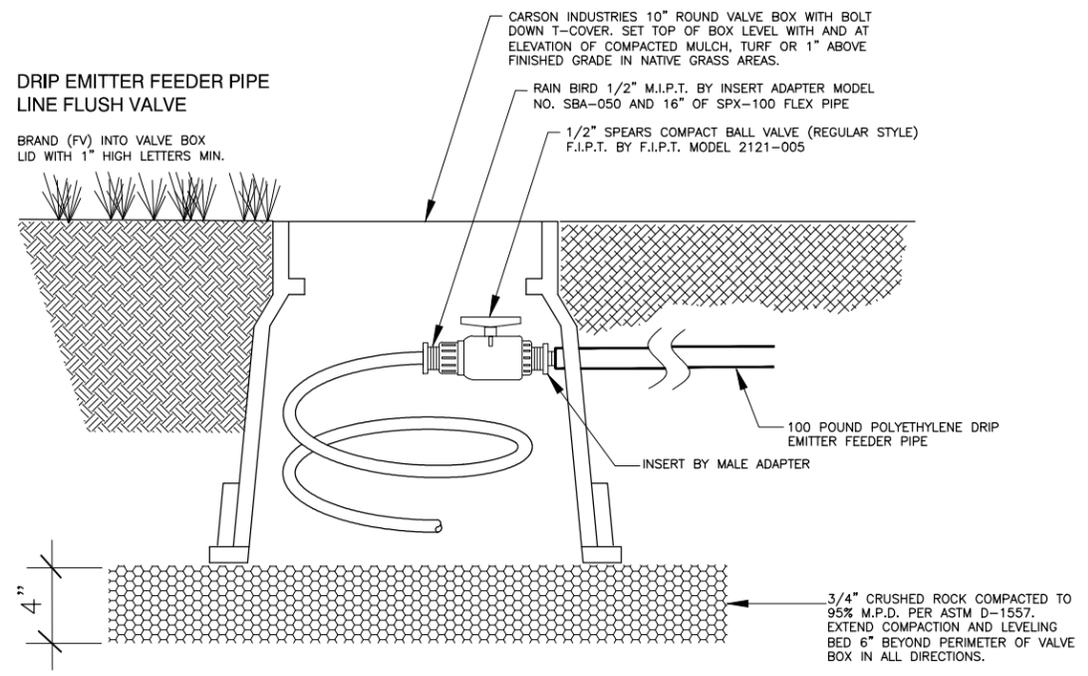
IRRIGATION DETAILS	
Designer:	Structure Numbers
Detailer:	
Sheet Subset: Irrigation	Subset Sheets: IR-33

Project No./Code	STM 110-081
	18405
Sheet Number	419

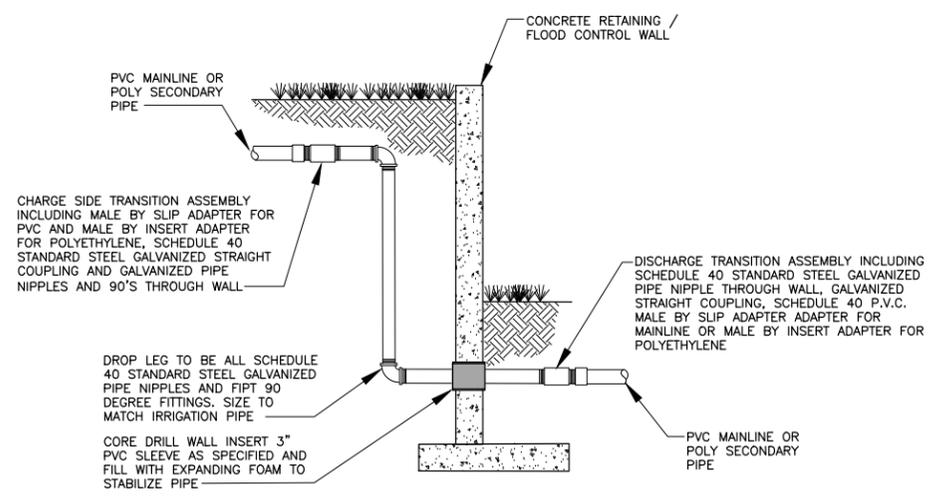
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A RAIN BIRD DRIP EMITTER
IR-34 NO SCALE



B DRIP EMITTER FEEDER PIPE FLUSH VALVE
IR-34 NO SCALE



C IRRIGATION SYSTEM DROP LEG WALL SLEEVE
IR-34 NO SCALE

Computer File Information

Creation Date:	Initials:
Last Modification Date:	Initials:
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WONDERLAND CREEK - GREENWAYS IMPROVEMENT PROJECT

IRRIGATION DETAILS

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