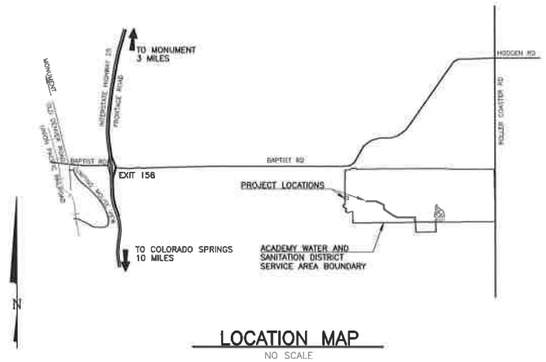
LIFT STATION AND FORCE MAIN IMPROVEMENTS

FOR

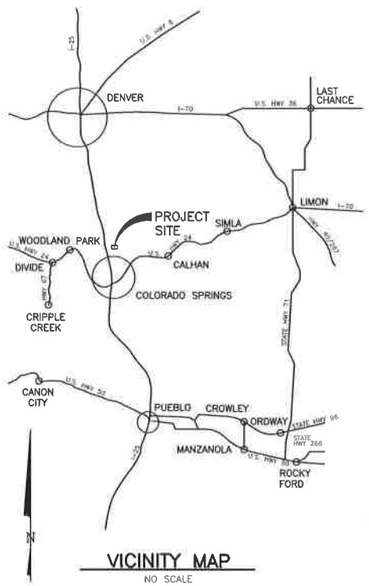
ACADEMY WATER & SANITATION DISTRICT

JUNE 2017



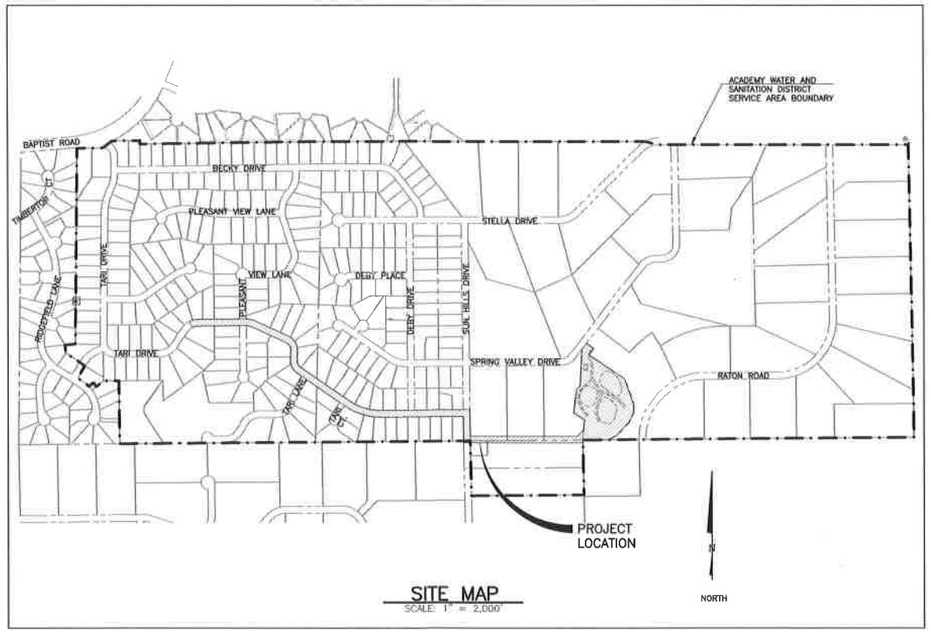
LOCATION MAP

NO SCALE



VICINITY MAP

NO SCALE



SITE MAP

SCALE: 1" = 2,000'

DRAWING INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET, VICINITY MAP, DRAWING INDEX AND APPROVAL
2	GENERAL NOTES AND OVERALL SITE PLAN
3	SHEET INDEX
4	EXISTING DEMOLITION SITE PLAN
5	PROPOSED LIFT STATION SITE PLANS
6	FORCE MAIN PLAN AND PROFILE
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12	GRAVITY PIPE SYSTEM
13	DETAILS
14	OVERFLOW POND DETAILED GRADING PLAN
15	STORAGE BUILDING COVER SHEET – PIKES PEAK REGIONAL BUILDING DEPARTMENT SUBMITTAL
16	STORAGE BUILDING SITE PLAN WITH BOUNDARY – PIKES PEAK REGIONAL BUILDING DEPARTMENT SUBMITTAL
17	STORAGE BUILDING STRUCTURAL GENERAL NOTES
18	STORAGE BUILDING ARCHITECTURAL ELEVATIONS AND DETAILS
19	STORAGE BUILDING STRUCTURAL PLANS AND DETAILS
20	LIFT STATION DRY PIT ACCESS BUILDING COVER SHEET – PIKES PEAK REGIONAL BUILDING DEPARTMENT SUBMITTAL
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25	LIFT STATION DRY PIT ACCESS BUILDING STRUCTURAL DETAILS AND SECTIONS
26	LIFT STATION PIPING PLAN AND SECTIONS
27	DETAILS
28	ELECTRICAL ONE-LINE DIAGRAM, SCHEDULE AND DETAILS
29	POWER AND LIGHTNING PLAN, POWER PANELS AND EQUIPMENT SCHEDULES
30	EXISTING WWTF LAGOON DECOMMISSIONING
31	EXISTING LIFT STATION DECOMMISSIONING

APPROVED FOR BIDDING AND CONSTRUCTION

BY: _____ DATE: JUNE 2017

ACADEMY WATER & SANITATION DISTRICT

GMS, INC.

611 NORTH WEBER, SUITE 300

COLORADO SPRINGS, COLORADO 80903

PLOT CONFIGURATION: GMS-STANDARDS.STB(SCREEN)
CAD FILENAME: G:\ACADEMY\11800\4\ANSI\D0211800802.DWG

GENERAL NOTES

(NOTES GIVEN HEREUNDER APPLY TO THE ENTIRE PROJECT AND DRAWINGS)

LEGEND OF EXISTING LINES AND SYMBOLS

- WROUGHT IRON FENCE
- WOOD FENCE
- PICKET FENCE
- CHAIN LINK FENCE
- POST & RAIL FENCE
- POST AND CABLE OR CHAIN
- WIRE MESH FENCE
- WIRE STRAND FENCE
- BARBED WIRE FENCE
- CINDER BLOCK WALL
- ROCK WALL
- CONCRETE WALL
- BRICK WALL OR EDGER
- LANDSCAPE TIMBER AS CURB OR WALL
- SANITARY SEWER LINE
- SANITARY SEWER SERVICE LINE
- STORM SEWER LINE
- OVERHEAD ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- OVERHEAD TELEPHONE LINE
- UNDERGROUND TELEPHONE LINE
- OVERHEAD TELEVISION LINE
- UNDERGROUND TELEVISION LINE
- WATER LINE
- WATER SERVICE LINE
- GAS LINE
- GAS SERVICE LINE
- SECTION LINE
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- EASEMENT LINE
- INTERMEDIATE CONTOUR LINE
- INDEX CONTOUR LINE WITH ELEVATION LABEL
- DITCH FLOWLINE
- GUARD RAIL
- BUILDING
- BUILDING CANOPY OR OVERHANG
- CONCRETE FLATWORK
- ASPHALT SURFACING
- GRAVEL ROADWAY/DRIVEWAY
- DIRT ROAD

- FIRE HYDRANT
- WATER VALVE BOX
- WATER CURB STOP
- WATER METER PIT
- SPRINKLER SYSTEM CONTROL VALVE
- WATER MANHOLE
- WATER WELL
- GAS VALVE
- GAS METER
- UTILITY POLE
- UTILITY POLE w/ LIGHT
- METAL LIGHT POLE
- ELECTRIC MANHOLE
- GUY WIRE ANCHOR
- GUY POLE
- ELECTRIC BOX
- PULL BOX
- 4'x4' ELECTRIC VAULT
- ELECTRIC METER
- YARD LIGHT
- TELEPHONE PEDESTAL
- TELEPHONE POLE
- TELEVISION PEDESTAL
- TELEVISION POLE
- SOIL BORING
- SIGN
- MAIL BOX
- GUARD POST/BOLLARD
- MONITOR WELL
- DECIDUOUS TREE
- CONIFEROUS TREE
- DECIDUOUS BUSH
- CONIFEROUS BUSH
- SPOT ELEVATION
- CONTROL POINT
- PROPERTY CORNER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEAN-OUT
- STORM SEWER MANHOLE

LEGEND OF PROPOSED LINES AND SYMBOLS

- WATER SERVICE LINE
- UNDERGROUND ELECTRIC, LATERAL AND/OR SIGNAL LINE
- CURB STOP
- PLUG VALVE
- YARD HYDRANT
- PLUG VALVE WITH SEAT SIDE INDICATED BY DARKENED HALF

- SANITARY SEWER LINE
- MANHOLE, VAULT OR STRUCTURE
- SANITARY SEWER FORCE MAIN
- INDEX CONTOUR LINE WITH ELEVATION
- INTERMEDIATE CONTOUR LINE
- GRAVEL ROADWAY/DRIVEWAY
- ASPHALT SURFACING
- RIPRAP

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PLOT STYLE FILE: 10500C.CTB
FILENAME: G:\ACADEMY\15064.400\2017\15064002.DWG

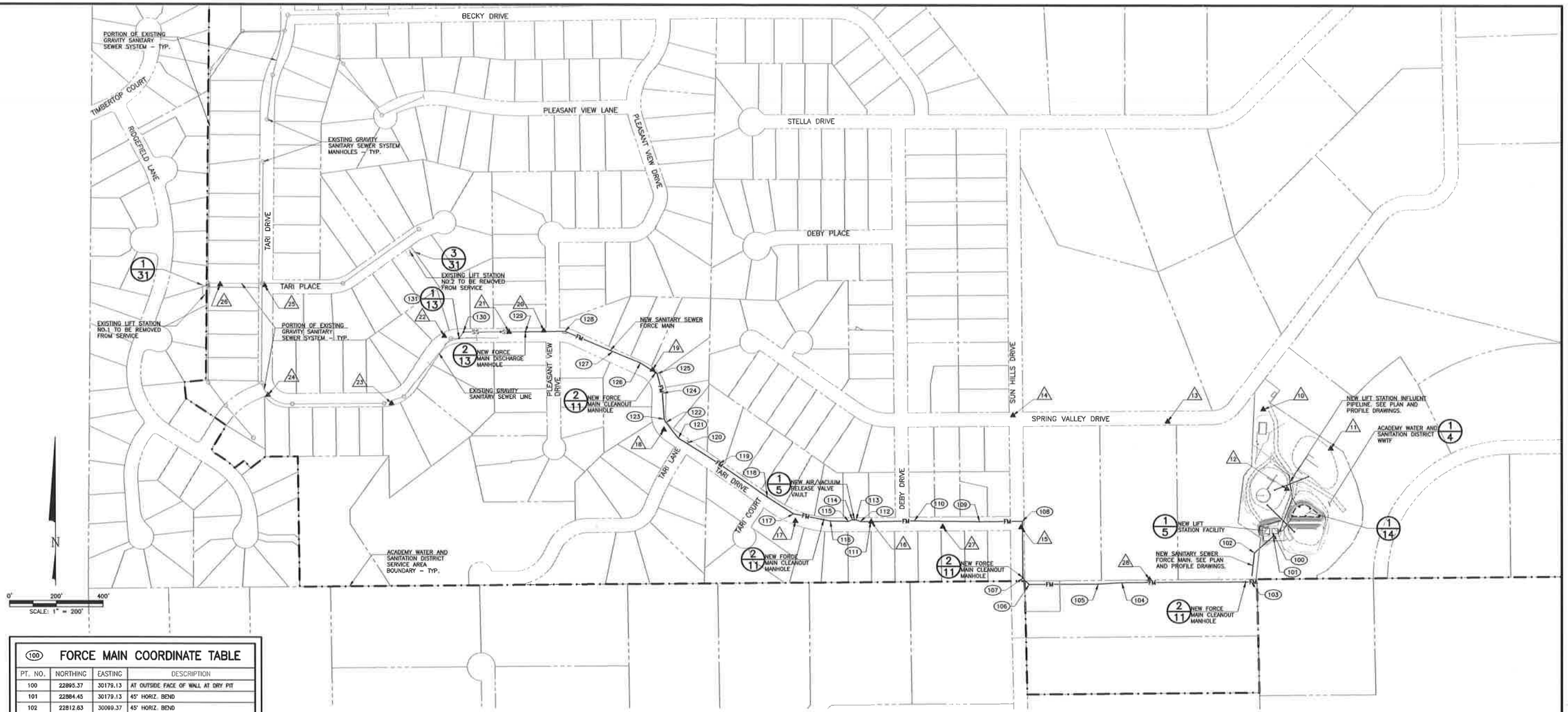
GENERAL NOTES AND LEGEND

LIFT STATION AND FORCE MAIN IMPROVEMENTS

ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
CHECKED EDM
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903



FORCE MAIN COORDINATE TABLE

(100)			
PT. NO.	NORTHING	EASTING	DESCRIPTION
100	22895.37	30179.13	AT OUTSIDE FACE OF WALL AT DRY PIT
101	22884.45	30179.13	45° HORIZ. BEND
102	22812.83	30099.37	45° HORIZ. BEND
103	22688.47	30085.29	90° HORIZ. BEND
104	22683.91	29523.22	HORIZ. ANGLE POINT
105	22678.10	29423.36	HORIZ. ANGLE POINT
106	22675.69	29127.79	45° HORIZ. BEND
107	22702.36	29100.87	45° HORIZ. BEND
108	22947.43	29099.06	90° HORIZ. BEND
109	22945.15	28911.96	HORIZ. ANGLE POINT
110	22947.94	28830.98	HORIZ. ANGLE POINT
111	22944.45	28444.97	HORIZ. ANGLE POINT
112	22945.15	28399.30	22.5° HORIZ. BEND
113	22952.50	28382.31	22.5° HORIZ. BEND
114	22952.74	28366.32	22.5° HORIZ. BEND
115	22945.92	28349.11	22.5° HORIZ. BEND
116	22947.15	28269.62	11.25° HORIZ. BEND
117	22977.73	28110.23	22.5° HORIZ. BEND
118	23049.59	27995.71	HORIZ. ANGLE POINT
119	23191.85	27788.43	HORIZ. ANGLE POINT
120	23280.26	27650.49	HORIZ. ANGLE POINT
121	23301.00	27616.17	22.5° HORIZ. BEND
122	23368.65	27562.83	11.25° HORIZ. BEND
123	23382.89	27555.34	22.5° HORIZ. BEND
124	23494.10	27547.83	11.25° HORIZ. BEND
125	23578.30	27525.10	45° HORIZ. BEND
126	23623.42	27452.59	11.25° HORIZ. BEND
127	23671.73	27333.88	HORIZ. ANGLE POINT
128	23757.71	27126.19	22.5° HORIZ. BEND
129	23755.70	26955.76	FM DISCHARGE MH
130	23754.74	26689.35	GRAVITY MH 45° HORIZ. BEND
131	23727.61	26670.31	NEW MH ON EXISTING SS

SHEET INDEX

LIFT STATION AND FORCE MAIN IMPROVEMENTS

ACADEMY WATER & SANITATION DISTRICT

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CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET 3 OF 31

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SPRING VALLEY DRIVE

EXISTING WELL. DO NOT DISTURB.

EXISTING WATER TREATMENT PLANT. DO NOT DISTURB.

PROPERTY LINE

EXISTING PERIMETER FENCE TO REMAIN – TYP.

EXISTING ELECTRIC SERVICE POLE TO REMAIN. DISCONNECT EXISTING ELECTRIC FEEDERS ONCE NEW LIFT STATION IS IN SERVICE.

REMOVE PIPE IN LAGOON AS NECESSARY AND INSTALL 2' CONCRETE PLUG IN END OF PIPE

REMOVE ALL BAFFLES FROM LAGOON CELL

EXISTING INFLUENT PIPELINE TO REMAIN IN SERVICE – TYP.

CELL NO. 1

EXISTING BLOWER BUILDING TO BE ABANDONED. DISCONNECT BLOWER FROM ELECTRIC POWER AND ABANDON IN PLACE

REMOVE EXISTING INLET STRUCTURE

REMOVE PIPE IN LAGOON AS NECESSARY AND INSTALL 2' CONCRETE PLUG IN END OF PIPE.

REMOVE ALL BAFFLES FROM LAGOON CELL

CELL NO. 2

EXISTING ABANDONED PIPE – TYP.

REMOVE TRANSFER PIPING AND EFFLUENT PIPING AND ALL PIPE SUPPORTS

CLOSE VALVES AND ABANDON IN PLACE

REMOVE PIPE AND HEADWALL IN LAGOON AS NECESSARY AND INSTALL 2' CONCRETE PLUG IN END OF PIPE.

REMOVE INTERNAL PIPE AND INSTALL CONCRETE PLUG IN ALL PIPE PENETRATIONS

CELL NO. 3

TEMPORARILY REROUTE EXISTING UNDERGROUND ELECTRIC TO DISINFECTION AND EFFLUENT STRUCTURES AS NECESSARY FOR CONSTRUCTION

PROPERTY LINE

INSTALL 2' CONCRETE PLUG IN END OF PIPE AND ABANDON IN HEADWALL

EXISTING DISINFECTION AND EFFLUENT STRUCTURES TO BE ABANDONED IN PLACE.

N

0' 40' 80'

SCALE: HORIZ. 1" = 40'

SHEET NOTES:

1. THE EXISTING WWTF AND ALL OF ITS COMPONENTS MUST REMAIN OPERATIONAL TO MEET EFFLUENT REQUIREMENTS UNTIL THE LIFT STATION IS FULLY FUNCTIONAL AND INFLUENT WASTEWATER IS DIVERTED TO THE WET WELL. THIS INCLUDES THE CONSTRUCTION OF THE EMERGENCY OVERFLOW POND.
2. ONCE THE LIFT STATION FACILITIES ARE FULLY FUNCTIONAL, THE CONTRACTOR SHALL DRAIN EXISTING LAGOON CELLS SO THE BIOSOLIDS CAN BE WORKED AND DRIED WITHIN THE CELLS AND EXISTING EQUIPMENT CAN BE REMOVED AND DISPOSED OF OFF-SITE. SEE NOTES ON PROPOSED SITE PLAN.
3. ALL EXISTING ITEMS REMOVED SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, UNLESS DEEMED SALVAGE BY THE OWNER.
4. REFER TO PROJECT MANUAL FOR INFORMATION ON EQUIPMENT WITHIN EACH LAGOON CELL.

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EXISTING DEMOLITION SITE PLAN
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

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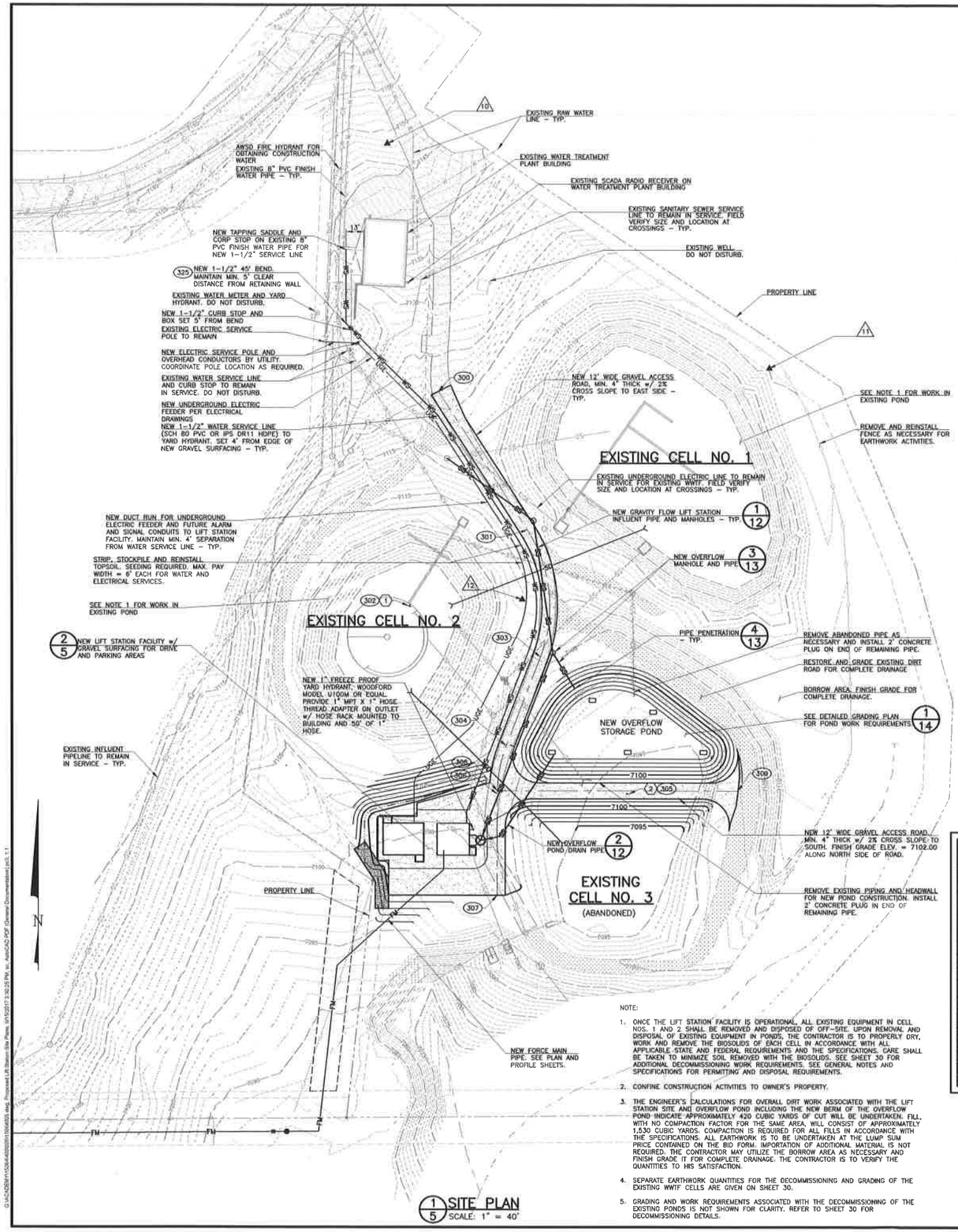
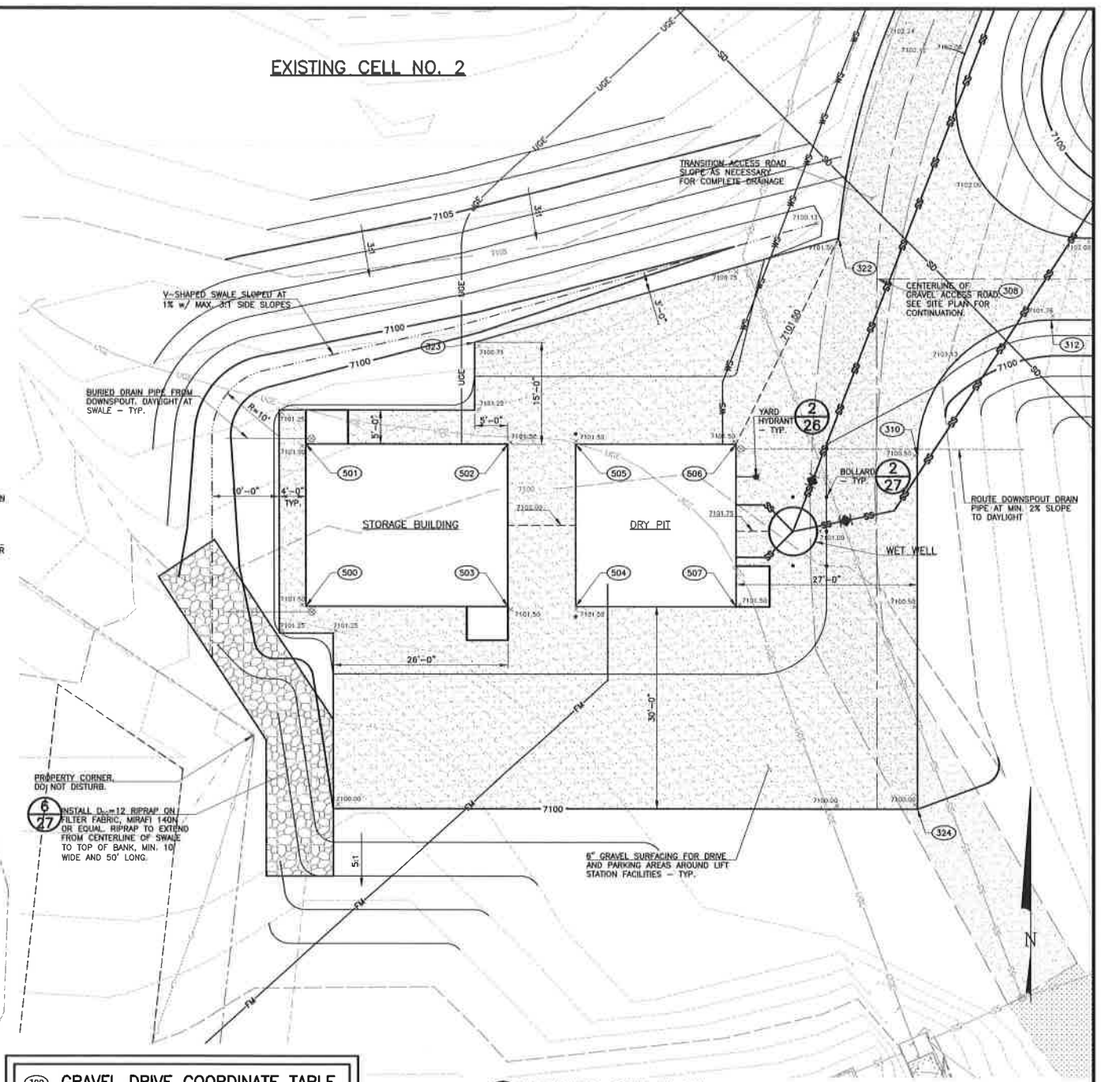


1/5 SITE PLAN
SCALE: 1" = 40'



2/5 DETAILED SITE PLAN
SCALE: 1" = 10'

(300) GRAVEL DRIVE COORDINATE TABLE

PT. NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
300	23244.03	30175.56	7121.50	Drive Centerline
301	23140.05	30242.38	7113.30	DRIVE CENTERLINE PC
302	23082.75	30153.21		DRIVE CENTERLINE RP
303	23044.39	30252.02	7105.25	DRIVE CENTERLINE PT
304	22977.52	30226.07	7101.93	DRIVE CENTERLINE PC
305	22941.34	30319.30		DRIVE CENTERLINE RP
306	22941.34	30219.30	7101.32	DRIVE CENTERLINE PT
307	22865.37	30219.30	7100.00	END DRIVE CENTERLINE
308	22943.75	30219.32	7101.38	DRIVE CENTERLINE INTERSECTION
310	22917.75	30225.30		DRIVE PC
311	22917.75	30245.30		DRIVE EDGE RP
312	22937.75	30245.30		DRIVE PC
322	22949.75	30213.63		EDGE OF GRAVEL
323	22934.37	30156.30		EDGE OF GRAVEL
324	22865.37	30225.30		EDGE OF GRAVEL
325	23294.62	30108.58		WATER SERVICE 45° HORIZ. BEND

(500) STRUCTURE COORDINATE TABLE

PT. NO.	NORTHING	EASTING	DESCRIPTION
500	22895.37	30134.30	SW COR STO BUILDING
501	22919.37	30134.30	NW COR STO BUILDING
502	22919.37	30164.30	NE COR STO BUILDING
503	22895.37	30164.30	SE COR BUILDING
504	22895.37	30174.30	SW COR DRY PIT
505	22919.37	30174.30	NW COR DRY PIT
506	22919.37	30198.30	NE COR DRY PIT
507	22895.37	30198.30	SE COR DRY PIT

(1) CURVE TABLE

CURVE NO.	DELTA	RADIUS	LENGTH	DESCRIPTION
1	53°56'13"	106.00'	99.79'	CENTERLINE OF ACCESS ROAD
2	21°12'46"	100.00'	37.02'	CENTERLINE OF ACCESS ROAD

NOTE:

1. ONCE THE LIFT STATION FACILITY IS OPERATIONAL, ALL EXISTING EQUIPMENT IN CELL NOS. 1 AND 2 SHALL BE REMOVED AND DISPOSED OF OFF-SITE. UPON REMOVAL AND DISPOSAL OF EXISTING EQUIPMENT IN PONDS, THE CONTRACTOR IS TO PROPERLY DRY, WORK AND REMOVE THE BIOSOLIDS OF EACH CELL IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS AND THE SPECIFICATIONS. CARE SHALL BE TAKEN TO MINIMIZE SOIL REMOVED WITH THE BIOSOLIDS. SEE SHEET 30 FOR ADDITIONAL DECOMMISSIONING WORK REQUIREMENTS. SEE GENERAL NOTES AND SPECIFICATIONS FOR PERMITTING AND DISPOSAL REQUIREMENTS.
2. CONFINE CONSTRUCTION ACTIVITIES TO OWNER'S PROPERTY.
3. THE ENGINEER'S CALCULATIONS FOR OVERALL DIRT WORK ASSOCIATED WITH THE LIFT STATION SITE AND OVERFLOW POND INCLUDING THE NEW BERM OF THE OVERFLOW POND INDICATE APPROXIMATELY 420 CUBIC YARDS OF CUT WILL BE UNDERTAKEN. FILL, WITH NO COMPACTION FACTOR FOR THE SAME AREA, WILL CONSIST OF APPROXIMATELY 1,530 CUBIC YARDS. COMPACTION IS REQUIRED FOR ALL FILLS IN ACCORDANCE WITH THE SPECIFICATIONS. ALL EARTHWORK IS TO BE UNDERTAKEN AT THE LUMP SUM PRICE CONTAINED ON THE BID FORM. IMPORTATION OF ADDITIONAL MATERIAL IS NOT REQUIRED. THE CONTRACTOR MAY UTILIZE THE BORROW AREA AS NECESSARY AND FINISH GRADE IT FOR COMPLETE DRAINAGE. THE CONTRACTOR IS TO VERIFY THE QUANTITIES TO HIS SATISFACTION.
4. SEPARATE EARTHWORK QUANTITIES FOR THE DECOMMISSIONING AND GRADING OF THE EXISTING WWTF CELLS ARE GIVEN ON SHEET 30.
5. GRADING AND WORK REQUIREMENTS ASSOCIATED WITH THE DECOMMISSIONING OF THE EXISTING PONDS IS NOT SHOWN FOR CLARITY. REFER TO SHEET 30 FOR DECOMMISSIONING DETAILS.

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BASE DWG: G:\
PLOT STYLE FILE: 10900.CTB
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PROPOSED LIFT STATION SITE PLANS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
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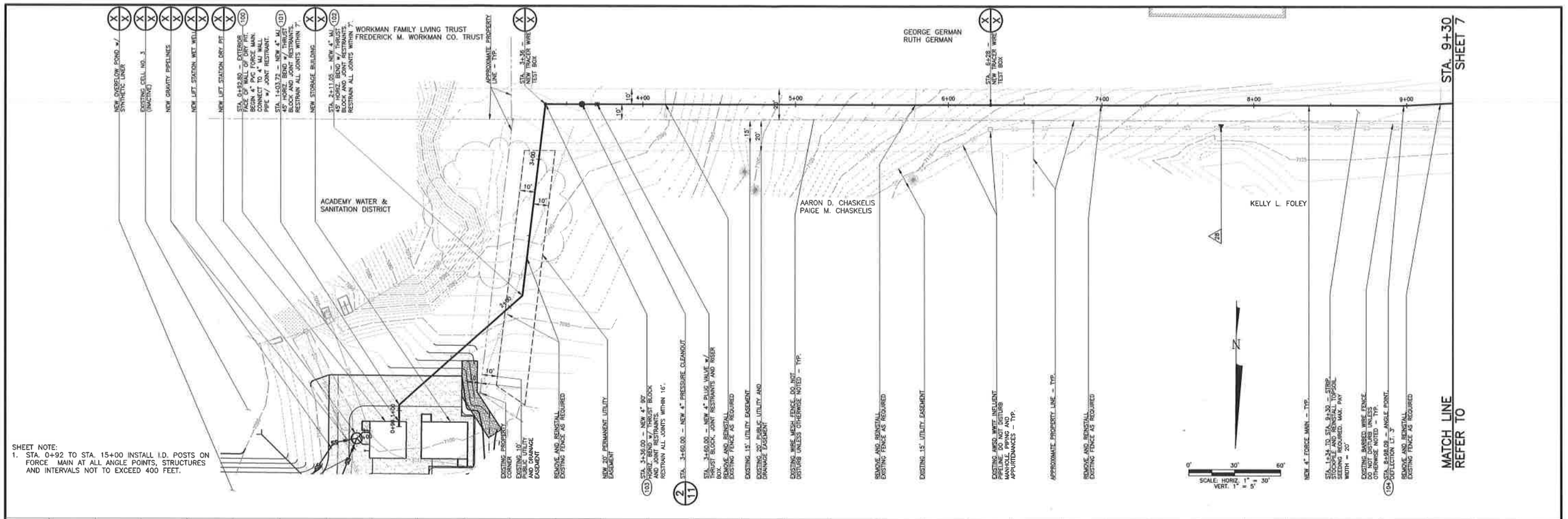
NEW OVERFLOW POND w/ SYNTHETIC LINER
EXISTING CELL NO. 3 (INACTIVE)
NEW GRAVITY PIPELINES
NEW LIFT STATION WET WELL
NEW LIFT STATION DRY PIT
STA. 0+92.80 – EXTERIOR FACE OF WALL OF DRY PIT. BEGIN 4" FORCE MAIN. CONNECT TO 4" HDPE W/ JOINT RESTRAINT.
STA. 1+03.72 – NEW 4" 45° HORIZ BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'.
STA. 2+11.05 – NEW 4" 45° HORIZ BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'.
NEW STORAGE BUILDING
WORKMAN FAMILY LIVING TRUST
FREDERICK M. WORKMAN CO. TRUST
APPROXIMATE PROPERTY LINE – TYP.
STA. 3+26 – NEW TRACER WIRE TEST BOX
GEORGE GERMAN
RUTH GERMAN
STA. 6+28 – NEW TRACER WIRE TEST BOX
STA. 9+30
SHEET 7
ACADEMY WATER & SANITATION DISTRICT
AARON D. CHASKELIS
PAIGE M. CHASKELIS
KELLY L. FOLEY
EXISTING 10' PUBLIC UTILITY AND DRAINAGE EASEMENT
REMOVE AND REINSTALL EXISTING FENCE AS REQUIRED
NEW 20' PERMANENT UTILITY EASEMENT
STA. 3+36.00 – NEW 4" 90° HORIZ. BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 16'.
STA. 3+60.00 – NEW 4" PRESSURE CLEANOUT ASSEMBLY AT LOW POINT
STA. 3+60.00 – NEW 4" PLUG VALVE w/ THRUST BLOCK, JOINT RESTRAINTS AND RISER
EXISTING 15' UTILITY EASEMENT
EXISTING 20' PUBLIC UTILITY AND DRAINAGE EASEMENT
EXISTING WIRE MESH FENCE – DO NOT DISTURB UNLESS OTHERWISE NOTED – TYP.
EXISTING 15' UTILITY EASEMENT
EXISTING AWSD WWTF INCLUENT PIPELINE – DO NOT DISTURB MARK LOCATION AND APPURTENANCES – TYP.
APPROXIMATE PROPERTY LINE – TYP.
NEW 4" FORCE MAIN – TYP.
STA. 1+34 TO STA. 8+20 – STRIP, STOCKPILE AND REINSTALL TOPSOIL OVER DISTURBED AREA. MAX. PAY WIDTH = 20'
EXISTING BARBED WIRE FENCE. MATCH EXISTING HEIGHT OTHERWISE NOTED – TYP.
STA. 8+38.09 – ANGLE POINT. DEFLECTION LT. 3°
REMOVE AND REINSTALL EXISTING FENCE AS REQUIRED
MATCH LINE
REFER TO
SHEET NOTE:
1. STA. 0+92 TO STA. 15+00 INSTALL I.D. POSTS ON FORCE MAIN AT ALL ANGLE POINTS, STRUCTURES AND INTERVALS NOT TO EXCEED 400 FEET.
SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'
417.20 L.F. OF 4" C900 DR14 PVC @ SLOPES INDICATED
420.00 L.F. OF 4" C900 DR14 PVC @ SLOPES INDICATED
PROPOSED GROUND SURFACE PROFILE – TYP.
EXISTING GROUND SURFACE PROFILE – TYP.
REMOVE AND REINSTALL FENCE AS REQUIRED
MAINTAIN MINIMUM 5' OF COVER AND DEEPER WHERE SHOWN. MAINTAIN POSITIVE AND NEGATIVE SLOPES AS INDICATED – TYP.
5' MIN.
-3.00%
-8.21%
-6.28%
-2.62%
-2.82%
3.48%
16.48%
10.37%
1.35%
5.76%
0.65%
STA. 0+92.80 – OUTSIDE FACE OF WALL BEGIN 4" PVC FORCE MAIN. CONNECT TO MJ ADAPTER AND RESTRAIN ALL JOINTS TO 45° BEND
4" INV. EL. = 7096.40
STA. 1+03.72 – NEW 4" 45° HORIZ BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'. GRADE BREAK.
4" INV. EL. = 7096.07
STA. 2+11.05 – NEW 4" 45° HORIZ BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'. GRADE BREAK.
4" INV. EL. = 7088.94
STA. 2+81.00 – GRADE BREAK
4" INV. EL. = 7084.24
NEW 4" FORCE MAIN w/ CLASS C BEDDING – TYP.
STA. 3+36.01 – NEW 4" 90° HORIZ BEND (67° ACTUAL) w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 2'.
4" INV. EL. = 7082.01
STA. 3+60.00 – NEW 4" PRESSURE CLEANOUT ASSEMBLY AT LOW POINT
4" INV. EL. = 7081.83
STA. 3+71.00 – NEW 4" PLUG VALVE w/ THRUST BLOCK, JOINT RESTRAINTS AND RISER
STA. 4+10.00 – NEW 4" 45° HORIZ BEND w/ THRUST BLOCK AND JOINT RESTRAINTS
4" INV. EL. = 7083.13
STA. 4+62.00 – GRADE BREAK
4" INV. EL. = 7091.69
STA. 6+34.00 – GRADE BREAK
4" INV. EL. = 7109.45
STA. 7+80.00 – GRADE BREAK
4" INV. EL. = 7116.13
STA. 8+38.10 – HORIZ. ANGLE POINT
4" INV. EL. = 7118.56
STA. 9+30
SHEET 7
MATCH LINE
REFER TO
0+90
1+50
2+10
2+70
3+30
3+90
4+50
5+10
5+10
5+70
6+30
6+90
7+50
8+10
8+70
7115
7110
7105
7100
7095
7090
7085
7080
7075
7070
7135
7130
7125
7120
7115
7110
7105
7100
7095
7090
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FORCE MAIN – STA. 1+00 TO STA. 9+30
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT
DRAWN SKC
DESIGNED MAM
CHECKED EDM
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801
GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903
SHEET 6 OF 31

STA. 9+30
SHEET 6

MATCH LINE
REFER TO

RESTORE DRAINAGE AS REQUIRED

STA. 9+98 – NEW TRACER WIRE TEST BOX

STA. 9+98.11 – ANGLE POINT, DEFLECTION RT. 3°

EXISTING 20' PUBLIC UTILITY AND DRAINAGE EASEMENT

NEW 4" FORCE MAIN – TYP.

EXISTING WOOD POST, REMOVE AND REINSTALL AS NECESSARY – TYP.

STA. 9+70 TO STA. 11+50 – STRIP, STOCKPILE AND REINSTALL TOPSOIL, SEEDING REQUIRED. MAX. PAY WIDTH = 20'

STA. 12+43.69 – NEW 4" 45° HORIZ. BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'.

STA. 12+50 TO STA. 13+50 – STRIP, STOCKPILE AND REINSTALL TOPSOIL, SEEDING REQUIRED.

STA. 13+32 – NEW TRACER WIRE TEST BOX

STA. 13+31.74 – NEW 4" 45° HORIZ. BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'.

STA. 13+35.00 – NEW 4" PRESSURE CLEANOUT ASSEMBLY AT LOW POINT

STA. 13+45.00 – NEW 4" PLUG VALVE w/ THRUST BLOCK, JOINT RESTRAINTS AND RISER BOX.

SUN HILLS DRIVE

MATCH LINE
REFER TO

STA. 13+50
THIS SHEET

EXISTING WIRE MESH FENCE, DO NOT DISTURB UNLESS OTHERWISE NOTED – TYP.

EXISTING 30' UTILITY EASEMENT

EXISTING 15' UTILITY EASEMENT

EXISTING 10' UTILITY EASEMENT

EXISTING WIRE MESH FENCE, DO NOT DISTURB UNLESS OTHERWISE NOTED – TYP.

APPROXIMATE LOCATION OF PROPERTY LINE – TYP.

REMOVE AND REINSTALL EXISTING FENCE AS REQUIRED

SHEET NOTE:
1. STA. 0+92 TO STA. 15+00 INSTALL I.D. POSTS ON FORCE MAIN AT ALL ANGLE POINTS, STRUCTURES AND INTERVALS NOT TO EXCEED 400 FEET.

MATCH LINE
REFER TO

STA. 13+50
THIS SHEET

DO NOT DISTURB PAVEMENT OF SUN HILLS DRIVE DURING PARALLEL PIPELINE INSTALLATION – TYP.

EXISTING MAILBOX, DO NOT DISTURB

STA. 13+50 TO STA. 15+74 – STRIP, STOCKPILE AND REINSTALL TOPSOIL, SEEDING REQUIRED. MAX. PAY WIDTH = 20'

EXISTING WIRE MESH FENCE, DO NOT DISTURB UNLESS OTHERWISE NOTED – TYP.

NEW 4" FORCE MAIN – TYP.

RESTORE DRAINAGE AS REQUIRED

EXISTING POST AND RAIL FENCE, DO NOT DISTURB

STA. 15+78.80 – NEW 4" 90° HORIZ. BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 16'.

STA. 15+73 STA. 17+70 – SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT SURFACE TO MAX. 5' EACH SIDE OF PIPE

EXISTING SANITARY SEWER MAIN CROSSING

EXISTING WATER MAIN CROSSING

EXISTING STORM SEWER CROSSING

EXISTING SANITARY SEWER MANHOLE, DO NOT DISTURB

EXISTING WATER MAIN, DO NOT DISTURB

EXISTING TELEPHONE PEDESTAL, DO NOT DISTURB FIELD VERIFY LOCATIONS OF BURIED LINES AND SERVICE LINES. SEE GENERAL NOTES – TYP.

APPROXIMATE LOCATION OF RIGHT-OF-WAY LINE – TYP.

STA. STA. 17+65.92 – ANGLE POINT, DEFLECTION RT. 1°

SUN HILLS DRIVE

TARI DRIVE

STA. 17+70
SHEET 8

MATCH LINE
REFER TO

N

SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'

420.00 L.F. OF 4" C900 DR14 PVC @ SLOPES INDICATED

STA. 9+30
SHEET 3

MATCH LINE
REFER TO

EXISTING OVERHEAD ELECTRIC CROSSING

EXISTING GROUND SURFACE PROFILE – TYP.

MAINTAIN MINIMUM 4' OF COVER AND VERTICAL HORIZONTAL ALIGNMENT AS POSITIVE AND NEGATIVE SLOPES AS INDICATED – TYP.

EXISTING OVERHEAD ELECTRIC CROSSING

REMOVE AND REINSTALL FENCE AS REQUIRED

STA. 9+98.11 – ANGLE POINT, DEFLECTION RT. 3°
4" INV. EL. = 7119.22

STA. 11+40.00 – GRADE BREAK
4" INV. EL. = 7123.98

NEW 4" FORCE MAIN w/ CLASS 'C' BEDDING – TYP.

STA. 12+43.69 – NEW 4" 45° HORIZ. BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'.
4" INV. EL. = 7038.14

EXISTING SANITARY SEWER MAIN CROSSING

STA. 13+31.74 – NEW 4" 45° HORIZ. BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 7'.
4" INV. EL. = 7039.55

STA. 13+35.00 – NEW 4" PRESSURE CLEANOUT ASSEMBLY AT LOW POINT

STA. 13+45.00 – NEW 4" PLUG VALVE w/ THRUST BLOCK, JOINT RESTRAINTS AND RISER BOX

5' MIN.

3.33%

7.37%

12.50%

1.57%

0.65%

7155 7150 7145 7140 7135 7130 7125 7120 7115 7010

9+30 9+90 10+50 11+10 11+70 12+30 12+90 13+50

420.00 L.F. OF 4" C900 DR14 PVC @ SLOPES INDICATED

STA. 17+70
SHEET 8

MATCH LINE
REFER TO

MAINTAIN MINIMUM 4' OF COVER AND VERTICAL HORIZONTAL ALIGNMENT AS POSITIVE AND NEGATIVE SLOPES AS INDICATED – TYP.

PROVIDE MINIMUM 1.5' CLEAR SEPARATION BELOW WATER MAIN

EXISTING WATER MAIN CROSSING

PROVIDE MINIMUM 1.0' CLEAR SEPARATION BELOW SANITARY SEWER MAIN

EXISTING SANITARY SEWER MAIN CROSSING

EXISTING CULVERT CROSSING

REMOVE AND REPLACE EXISTING ASPHALT SURFACE. SEE TYP. MEM.

EXISTING GROUND SURFACE PROFILE – TYP.

STA. 13+50.00 – GRADE BREAK
4" INV. EL. = 7140.00

NEW 4" FORCE MAIN w/ CLASS 'C' BEDDING – TYP.

STA. 15+35.00 – GRADE BREAK
4" INV. EL. = 7148.85

STA. 15+78.80 – NEW 4" 90° HORIZ. BEND w/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 16'.
4" INV. EL. = 7149.03

STA. 16+00.00 – GRADE BREAK
4" INV. EL. = 7149.16

STA. 17+65.92 – HORIZ. ANGLE POINT, DEFLECTION RT. 1°
4" INV. EL. = 7172.71

5' MIN.

0.50%

0.50%

14.44%

6.67%

7155 7180 7150 7175 7145 7170 7140 7165 7135 7160 7130 7155 7125 7150 7120 7145 7115 7140 7135

15+30 15+90 16+50 17+10 17+70

FORCE MAIN – STA. 9+30 TO STA. 17+70

LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN	SKC
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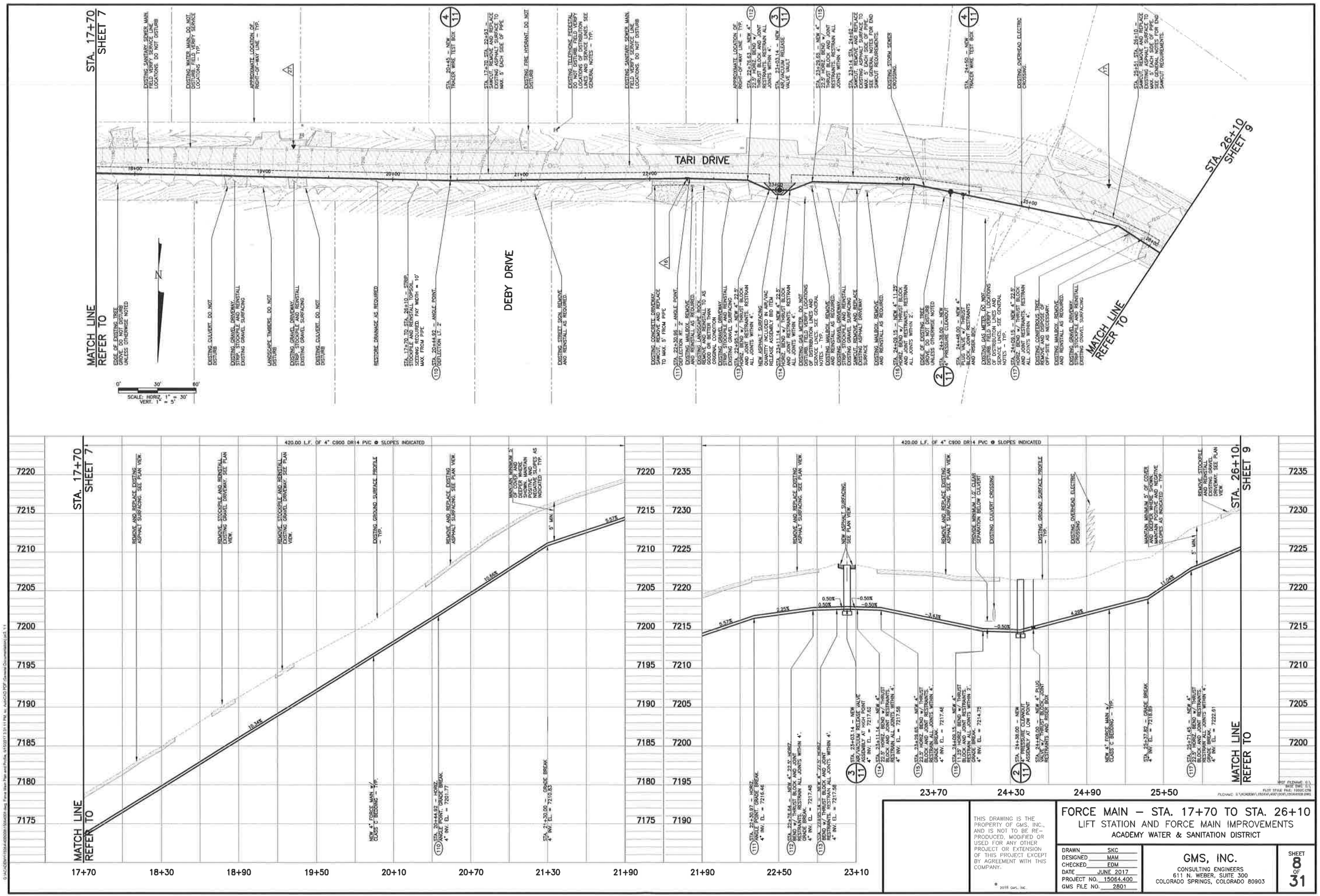
COLORADO SPRINGS, COLORADO 80903


STA. 17+70
SHEET 7
MATCH LINE
REFER TO
EDGE OF EXISTING TREE GROVE. DO NOT DISTURB UNLESS OTHERWISE NOTED
EXISTING SANITARY SEWER MAIN. FIELD VERIFY SERVICE LINE LOCATIONS. DO NOT DISTURB
EXISTING WATER MAIN. DO NOT DISTURB. FIELD VERIFY SERVICE LOCATIONS - TYP.
APPROXIMATE LOCATION OF RIGHT-OF-WAY LINE - TYP.
EXISTING CULVERT. DO NOT DISTURB
EXISTING GRAVEL DRIVEWAY. STRIP, STOCKPILE AND REINSTALL EXISTING GRAVEL SURFACING
LANDSCAPE TIMBERS. DO NOT DISTURB
EXISTING GRAVEL DRIVEWAY. STRIP, STOCKPILE AND REINSTALL EXISTING GRAVEL SURFACING
EXISTING CULVERT. DO NOT DISTURB
RESTORE DRAINAGE AS REQUIRED
STA. 17+70 TO STA. 26+10 - STRIP, STOCKPILE AND REINSTALL TOPSOIL. SEEDING REQUIRED. PAY WIDTH = 10' MAX. FROM PIPE
(110) STA. 20+44.92 - ANGLE POINT. DEFLECTION 17.2°
(4/11) STA. 21+45 - NEW TRACER WIRE TEST BOX
STA. 17+70 STA. 22+93 - SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT SURFACE TO MAX 5' EACH SIDE OF PIPE
EXISTING FIRE HYDRANT. DO NOT DISTURB
EXISTING TELEPHONE PEDESTAL AND UNDERGROUND UTILITY LOCATIONS OF DISTRIBUTION LINES AND SERVICE LINES. SEE GENERAL NOTES - TYP.
EXISTING SANITARY SEWER MAIN. FIELD VERIFY SERVICE LINE LOCATIONS. DO NOT DISTURB
DEBY DRIVE
EXISTING STREET SIGN. REMOVE AND REINSTALL AS REQUIRED
TARI DRIVE
18+00
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00
APPROXIMATE LOCATION OF RIGHT-OF-WAY LINE - TYP.
(113) STA. 22+76.84 - NEW 4" 22.5° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.
(3/11) STA. 23+03.14 - NEW AIR/VACUUM RELEASE VALVE VAULT
(115) STA. 23+29.85 - NEW 4" 22.5° BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.
STA. 23+18.4 - STA. 24+16.42 - SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT SURFACE TO MAX 5' EACH SIDE OF PIPE. SEE GENERAL NOTES FOR END SAWCUT REQUIREMENTS.
EXISTING STORM SEWER CROSSING
(4/11) STA. 24+50 - NEW TRACER WIRE TEST BOX
EXISTING OVERHEAD ELECTRIC CROSSING
STA. 25+51. STA. 26+10 - SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT SURFACE TO MAX 5' EACH SIDE OF PIPE. SEE GENERAL NOTES FOR END SAWCUT REQUIREMENTS.
STA. 26+10
SHEET 9
MATCH LINE
REFER TO
0'
30'
60'
SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'
N
420.00 L.F. OF 4" C900 DR14 PVC @ SLOPES INDICATED
REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.
REMOVE, STOCKPILE AND REINSTALL EXISTING GRAVEL DRIVEWAY. SEE PLAN VIEW.
REMOVE, STOCKPILE AND REINSTALL EXISTING GRAVEL DRIVEWAY. SEE PLAN VIEW.
EXISTING GROUND SURFACE PROFILE - TYP.
MAINTAIN MINIMUM 5' OF COVER AND DEEPER WHERE SHOWN. MAINTAIN POSITIVE AND NEGATIVE SLOPES AS INDICATED - TYP.
5' MIN.
5.57%
10.34%
NEW 4" FORCE MAIN W/ CLASS C BEDDING - TYP.
(110) STA. 20+44.92 - HORIZ. ANGLE POINT. GRADE BREAK. 4" INV. EL. = 7201.77
STA. 21+30.80 - GRADE BREAK. 4" INV. EL. = 7216.53
7220
7215
7210
7205
7200
7195
7190
7185
7180
7175
17+70
18+30
18+90
19+50
20+10
20+70
21+30
21+90
(111) STA. 22+30.97 - HORIZ. ANGLE POINT. GRADE BREAK. 4" INV. EL. = 7216.46
(112) STA. 22+76.84 - NEW 4" 22.5° HORIZ BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'. GRADE BREAK. 4" INV. EL. = 7217.48
(113) STA. 22+93.14 - NEW 4" 22.5° HORIZ BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'. 4" INV. EL. = 7217.58
(3/11) STA. 23+03.14 - NEW AIR/VACUUM RELEASE VALVE VAULT 4" INV. EL. = 7217.62
(114) STA. 23+11.14 - NEW 4" 22.5° HORIZ BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'. 4" INV. EL. = 7217.58
(115) STA. 23+29.85 - NEW 4" 22.5° HORIZ BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'. 4" INV. EL. = 7217.48
(116) STA. 23+48.15 - NEW 4" 11.25° HORIZ BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'. GRADE BREAK. 4" INV. EL. = 7214.75
(2/11) STA. 24+38.00 - NEW 4" PRESSURE CLEANOUT ASSEMBLY AT LOW POINT
STA. 24+45.00 - NEW 4" PLUG VALVE W/ THRUST BLOCKS AND JOINT RESTRAINTS AND RISER BOX.
NEW 4" FORCE MAIN W/ CLASS C BEDDING - TYP.
STA. 25+37.82 - GRADE BREAK. 4" INV. EL. = 7218.89
(117) STA. 25+79.45 - NEW 4" 22.5° HORIZ BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'. 4" INV. EL. = 7222.61
REMOVE, STOCKPILE AND REINSTALL EXISTING GRAVEL DRIVEWAY. SEE PLAN VIEW.
5' MIN.
11.04%
4.22%
-3.43%
-0.50%
0.50%
-0.50%
7.25%
23+70
24+30
24+90
25+50
26+10
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FORCE MAIN – STA. 17+70 TO STA. 26+10
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT
DRAWN SKC
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611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903
SHEET 8 OF 31

STA. 26+10
SHEET 8

MATCH LINE
REFER TO

TARI COURT

TARI DRIVE

TARI LANE

STA. 34+50
SHEET 10

MATCH LINE
REFER TO

EXISTING GRAVEL DRIVEWAY. STRIP, STOCKPILE AND REINSTALL EXISTING GRAVEL SURFACING

EXISTING POWER POLE. BRACE AS NECESSARY FOR CONSTRUCTION

EXISTING GAS METER. DO NOT DISTURB. FIELD VERIFY LOCATIONS OF DISTRIBUTION LINES AND SERVICE LINES. SEE GENERAL NOTES - TYP.

EXISTING GAS METER. DO NOT DISTURB. FIELD VERIFY LOCATIONS OF DISTRIBUTION LINES AND SERVICE LINES. SEE GENERAL NOTES - TYP.

EXISTING MAILBOX. REMOVE AND REINSTALL AS REQUIRED.

STA. 27+06.64 – ANGLE POINT. DEFLECTION RT. 2°

EXISTING VALVE BOX AND CONCRETE COLLAR. DO NOT DISTURB. FIELD VERIFY LOCATIONS OF DISTRIBUTION LINES AND SERVICE LINES. SEE GENERAL NOTES - TYP.

SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT DRIVEWAY SURFACE

DOET AND RAIL FENCE. DO NOT DISTURB.

EXISTING SANITARY SEWER CLEANOUT. DO NOT DISTURB. FIELD VERIFY LOCATIONS OF SERVICE LINES. SEE GENERAL NOTES - TYP.

SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT DRIVEWAY SURFACE

EXISTING MAILBOX. REMOVE AND REINSTALL AS REQUIRED.

EXISTING CULVERT. DO NOT DISTURB

SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT DRIVEWAY SURFACE

TIMBERS EACH SIDE. REMOVE AND REINSTALL AS NECESSARY.

EXISTING MAILBOX. REMOVE AND REINSTALL AS REQUIRED.

APPROXIMATE LOCATION OF RIGHT-OF-WAY LINE – TYP.

STA. 28+10 TO STA. 34+50 – STRIP, STOCKPILE AND REINSTALL TOPSOIL. SEEDING REQUIRED. PAY WIDTH = 10' MAX. FROM PIPE

TIMBERS EACH SIDE. REMOVE AND REINSTALL AS NECESSARY.

EXISTING CULVERT. DO NOT DISTURB

EXISTING GRAVEL DRIVEWAY. STRIP, STOCKPILE AND REINSTALL EXISTING GRAVEL SURFACING

STA. 29+58.05 – ANGLE POINT. DEFLECTION LT. 2°

EXISTING GAS METER. DO NOT DISTURB. FIELD VERIFY LOCATIONS OF DISTRIBUTION LINES AND SERVICE LINES. SEE GENERAL NOTES - TYP.

EXISTING MAILBOX. REMOVE AND REINSTALL AS REQUIRED.

EDGE OF EXISTING TREE GROVE. DO NOT DISTURB UNLESS OTHERWISE NOTED

RESTORE DRAINAGE AS REQUIRED.

NEW 4" FORCE MAIN – TYP.

STA. 31+24.89 – ANGLE POINT. DEFLECTION RT. 2°

EXISTING MAILBOX. REMOVE AND REINSTALL AS REQUIRED.

STA. 31+61.99 – NEW 4" 22.5° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.

EXISTING CULVERT. DO NOT DISTURB

EXISTING POWER POLE. BRACE AS NECESSARY FOR CONSTRUCTION

STA. 32+48.75 – NEW 4" 11.25° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 2'.

STA. 32+59.41 – NEW 4" 22.5° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.

EXISTING GUY POLE. BRACE AS NECESSARY FOR CONSTRUCTION

STA. 34+29.72 – NEW 4" 22.5° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.

TELEPHONE PEDESTAL

SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT DRIVEWAY SURFACE

EXISTING CULVERT. DO NOT DISTURB

TIMBERS EACH SIDE. REMOVE AND REINSTALL AS NECESSARY.

EXISTING MAILBOX. REMOVE AND REINSTALL AS REQUIRED.

RESTORE ASPHALT DRAINAGE CHANNEL AS CLOSE OR BETTER THAN ORIGINAL CONDITION.

STA. 28+50 – NEW 4 11 TRACER WIRE TEST BOX

STA. 32+48 – NEW 4 11 TRACER WIRE TEST BOX

APPROXIMATE LOCATION OF RIGHT-OF-WAY LINE – TYP.

EXISTING FIRE HYDRANT. DO NOT DISTURB

EXISTING WATER MAIN. DO NOT DISTURB. FIELD VERIFY SERVICE LOCATIONS – TYP.

EXISTING SANITARY SEWER MAIN. FIELD VERIFY SERVICE LINE LOCATIONS. DO NOT DISTURB

STA. 25+10, STA. 34+50 – SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT DRIVE TO MAX. 5' EACH SIDE OF PIPE

EXISTING OVERHEAD ELECTRIC CROSSING.

EXISTING OVERHEAD ELECTRIC CROSSING.

EXISTING MAILBOX. REMOVE AND REINSTALL AS REQUIRED.

STA. 34+50
SHEET 10

MATCH LINE
REFER TO

0' 30' 60'
SCALE: HORIZ. 1" = 30'
VERT. 1" = 5' 30'

420.00 L.F. OF 4" C900 DR14 PVC @ SLOPES INDICATED

420.00 L.F. OF 4" C900 DR14 PVC @ SLOPES INDICATED

REMOVE STOCKPILE AND REINSTALL EXISTING GRAVEL DRIVEWAY. SEE PLAN VIEW.

EXISTING GROUND SURFACE PROFILE – TYP.

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

MAINTAIN MINIMUM 5' OF COVER AND REMOVE AND REPLACE DEEPER WHERE NECESSARY TO MAINTAIN POSITIVE AND NEGATIVE SLOPES AS INDICATED – TYP.

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

EXISTING OVERHEAD ELECTRIC CROSSING

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

REMOVE STOCKPILE AND REINSTALL EXISTING GRAVEL DRIVEWAY. SEE PLAN VIEW.

EXISTING OVERHEAD ELECTRIC CROSSING

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

EXISTING OVERHEAD ELECTRIC CROSSING

EXISTING OVERHEAD ELECTRIC 21FT WIRE CROSSING

EXISTING GROUND SURFACE PROFILE – TYP.

MAINTAIN MINIMUM 5' OF COVER AND REMOVE AND REPLACE DEEPER WHERE NECESSARY TO MAINTAIN POSITIVE AND NEGATIVE SLOPES AS INDICATED – TYP.

REMOVE AND REPLACE EXISTING ASPHALT SURFACING. SEE PLAN VIEW.

7.50%

3.13%

4.29%

7.26%

6.96%

5' MIN.

6.80%

5.18%

5.21%

5.73%

9.44%

9.21%

STA. 27+06.64 – HORIZ. ANGLE POINT
GRADE BREAK
4" INV. EL. = 7232.09

NEW 4" FORCE MAIN W/ CLASS C BEDDING – TYP.

STA. 27+29.82 – GRADE BREAK
4" INV. EL. = 7234.79

STA. 28+28.87 – GRADE BREAK
4" INV. EL. = 7237.54

STA. 29+58.05 – HORIZ. ANGLE POINT
GRADE BREAK
4" INV. EL. = 7245.18

STA. 30+46.00 – GRADE BREAK
4" INV. EL. = 7251.35

STA. 31+24.89 – HORIZ. ANGLE POINT
GRADE BREAK
4" INV. EL. = 7256.17

STA. 31+62.00 – NEW 4" 22.5° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.
GRADE BREAK
4" INV. EL. = 7257.26

STA. 32+48.75 – NEW 4" 11.25° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 2'.
GRADE BREAK
4" INV. EL. = 7262.21

STA. 32+59.41 – NEW 4" 22.5° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.
GRADE BREAK
4" INV. EL. = 7263.59

NEW 4" FORCE MAIN W/ CLASS C BEDDING – TYP.

STA. 34+29.72 – NEW 4" 22.5° HORIZ. BEND W/ THRUST BLOCK AND JOINT RESTRAINTS. RESTRAIN ALL JOINTS WITHIN 4'.
GRADE BREAK
4" INV. EL. = 7274.11

26+10 26+70 27+30 27+90 28+50 29+10 29+70 30+30 30+30 30+90 31+50 32+10 32+70 33+30 33+90

7260 7255 7250 7245 7240 7235 7230 7225 7220 7215

7290 7285 7280 7275 7270 7265 7260 7255 7250 7245

FORCE MAIN – STA. 26+10 TO STA. 34+50

LIFT STATION AND FORCE MAIN IMPROVEMENTS

ACADEMY WATER & SANITATION DISTRICT

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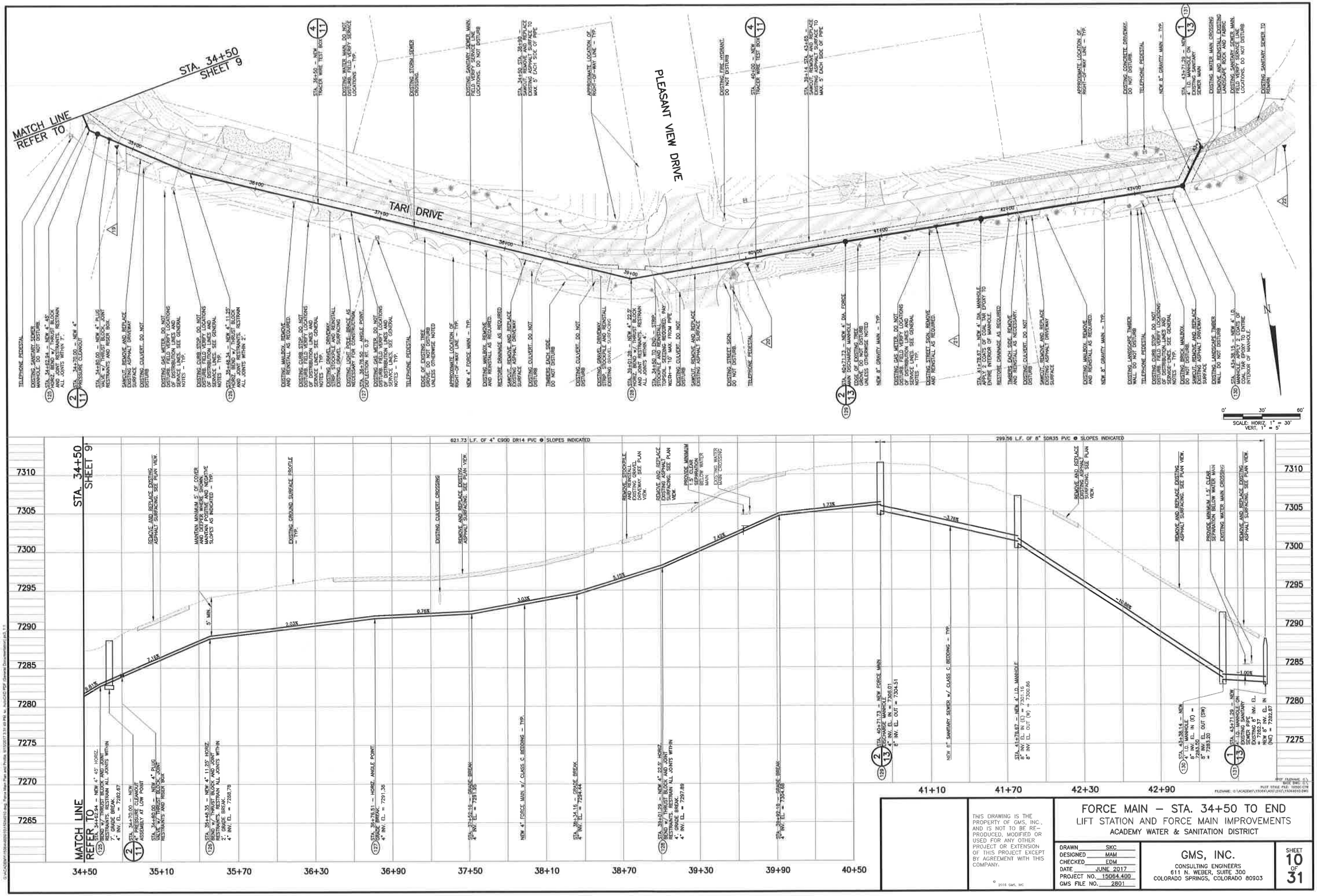
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

PLOT STYLE FILE: 1050.CTB
FILENAME: G:\ACADEM\15064\ARD\2801\15064000.DWG



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FORCE MAIN – STA. 34+50 TO END

LIFT STATION AND FORCE MAIN IMPROVEMENTS

ACADEMY WATER & SANITATION DISTRICT

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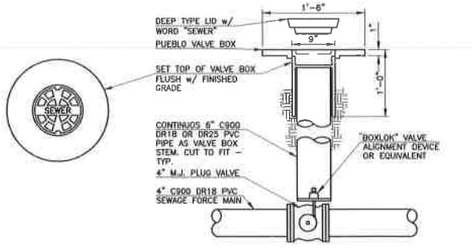
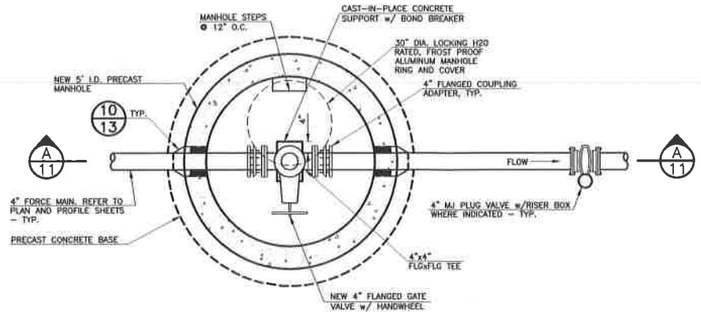
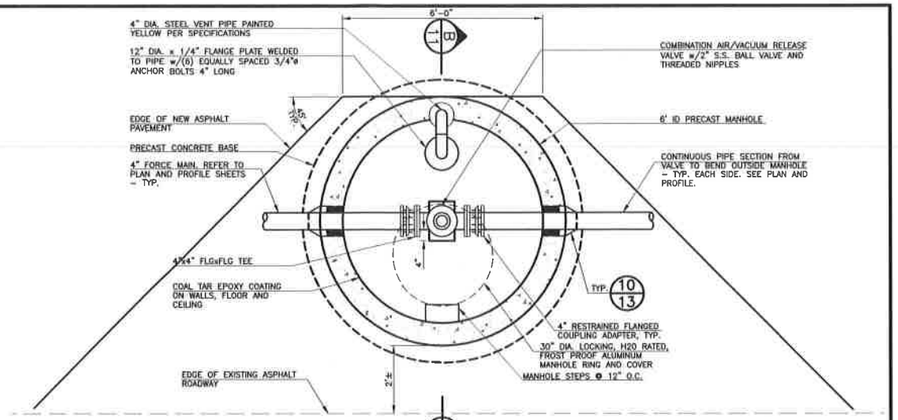
SHEET 10 OF 31



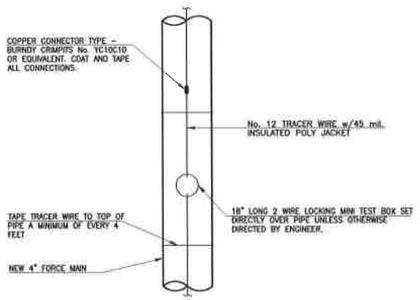
1/11 TYPICAL VALVE BOX DETAIL
SCALE: NONE



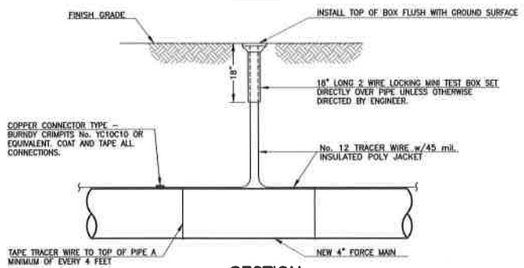
2/11 FORCE MAIN CLEAN-OUT DETAIL
SCALE: 1/2" = 1'-0"



3/11 AIR/VACUUM RELEASE VALVE DETAIL
SCALE: 1/2" = 1'-0"



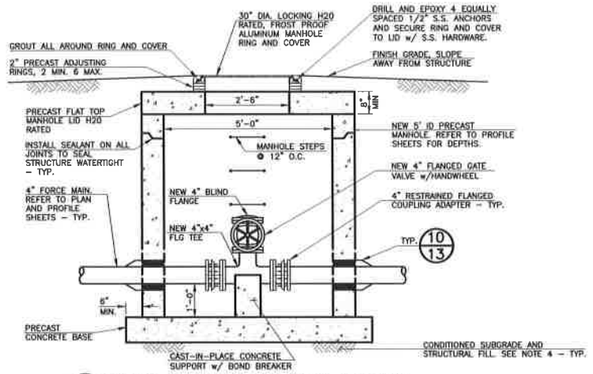
PLAN



SECTION

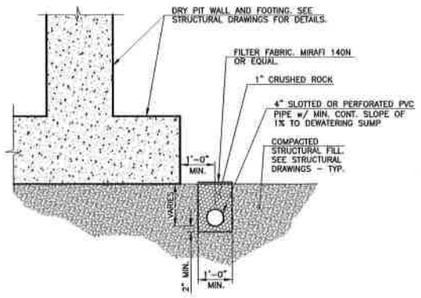
NOTE:
1. CONTRACTOR TO DEMONSTRATE CONTINUITY BETWEEN ALL TRACER WIRE BOXES PRIOR TO FINAL ACCEPTANCE.
2. BOXES TO BE INSTALLED AT LOCATIONS INDICATED ON THE DRAWINGS AND AT MAXIMUM 400' INTERVALS. REFER TO FORCE MAIN PLAN VIEWS.
3. TRACE WIRE TO BE INSTALLED ON ALL FORCE MAIN PIPING.
4. OUTSIDE FACE OF LIFT STATION DRY PIT WALL AT STATION 0+92.60 IS TO BE THE BEGINNING POINT FOR TRACER WIRE. INSTALL COPPER TRACER WIRE ALONG THE OUTSIDE FACE OF WALL AND SET A MINI TEST BOX AT FINISH GRADE OF GRAVEL SURFACING.
5. INSTALL CARSONITE MARKER POST AT MINI TEST BOX LOCATIONS AS DIRECTED. SEE THE GENERAL NOTES AND SPECIFICATIONS.

4/11 TRACER WIRE BOX INSTALLATION DETAIL
SCALE: NONE

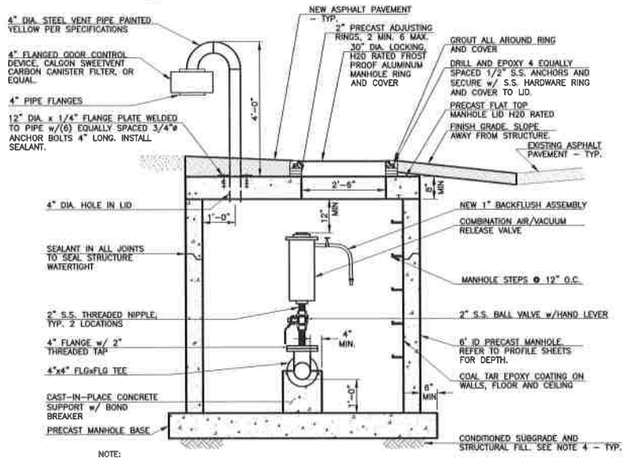


A/11 FORCE MAIN CLEAN-OUT SECTION
SCALE: 1/2" = 1'-0"

NOTES:
1. IN OFF ROAD AREAS SET RING AND COVER FLUSH WITH FINISHED GRADE.
2. IN ASPHALT SURFACING SET RING AND COVER 1/4" BELOW ASPHALT SURFACE.
3. DO NOT LOCATE RING AND COVER IN PRIVATE DRIVEWAYS.
4. SCARIFY, MOISTURE CONDITION AND RECOMPACT NATIVE GRANULAR MATERIAL AND INSTALL STRUCTURAL FILL PER SPECIFICATIONS.



5/11 PERIMETER DRAIN PIPE DETAIL
SCALE: NONE



NOTE:
1. AIR/VACUUM ASSEMBLIES SHALL BE INSTALLED ACCORDING TO THIS DETAIL. ALL AIR/VACUUM ASSEMBLIES SHALL BE 1" SIZE WITH 2" INLET AND 1" OUTLET AND SHALL HAVE 2" STAINLESS STEEL THREADED NIPPLES ABOVE AND BELOW THE 2" STAINLESS STEEL BALL VALVE AS SHOWN. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL INTERIOR CONCRETE OF THE MANHOLE IS TO RECEIVE A COAL TAR EPOXY COATING. SEE SPECIFICATIONS.
3. SET RING AND COVER 1/4" TO 1/2" BELOW ASPHALT SURFACE.
4. SCARIFY, MOISTURE CONDITION AND RECOMPACT NATIVE GRANULAR MATERIAL AND INSTALL STRUCTURAL FILL PER SPECIFICATIONS.

B/11 AIR/VACUUM RELEASE VALVE SECTION
SCALE: 1/2" = 1'-0"

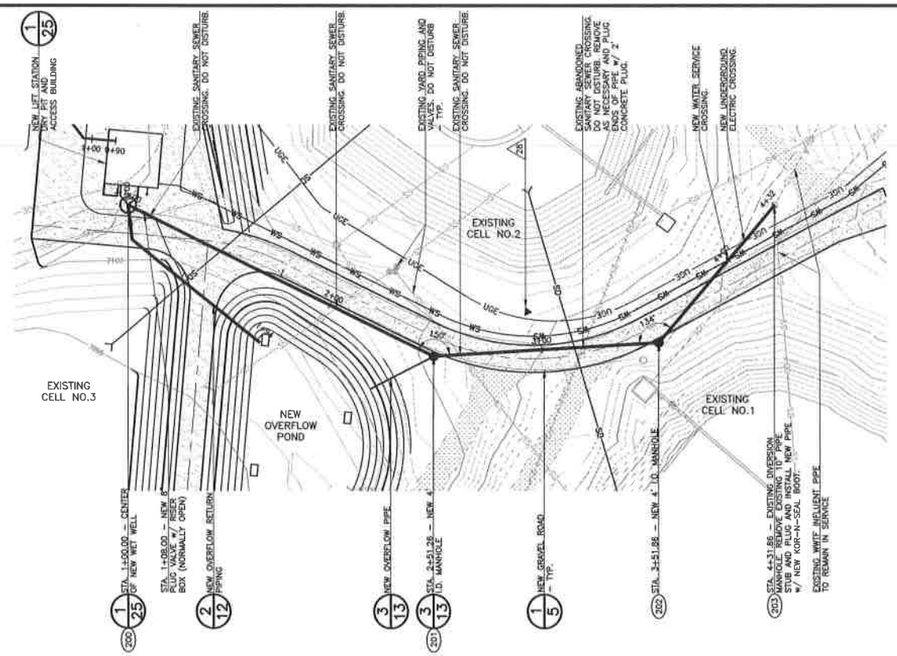
XREF FILENAME: G:\BASE DWG G:\PLOT STYLE FILE: 10500.CTB
FILENAME: G:\ACADSWT\15064\400\011\15064011.DWG

DETAILS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
CHECKED EDM
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

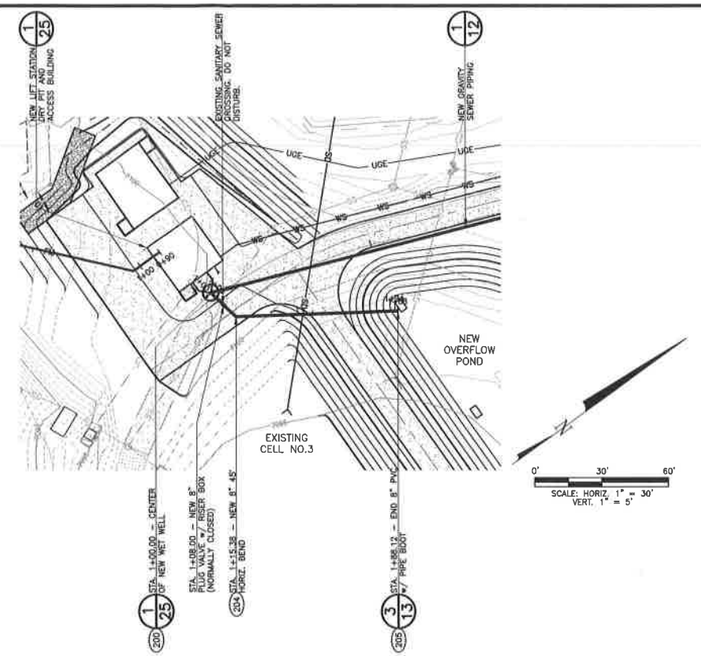
GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET 11 OF 31

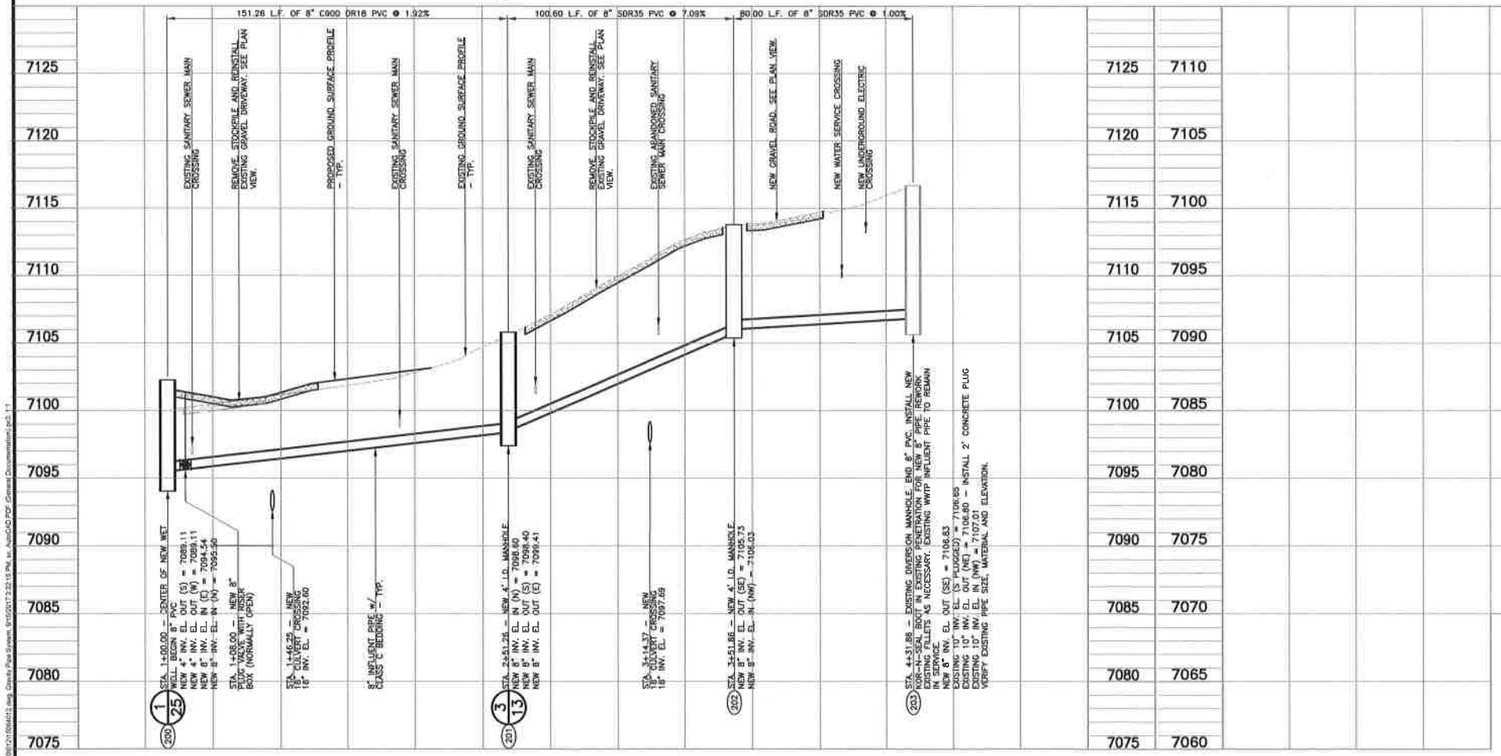


1/12 GRAVITY SEWER PLAN

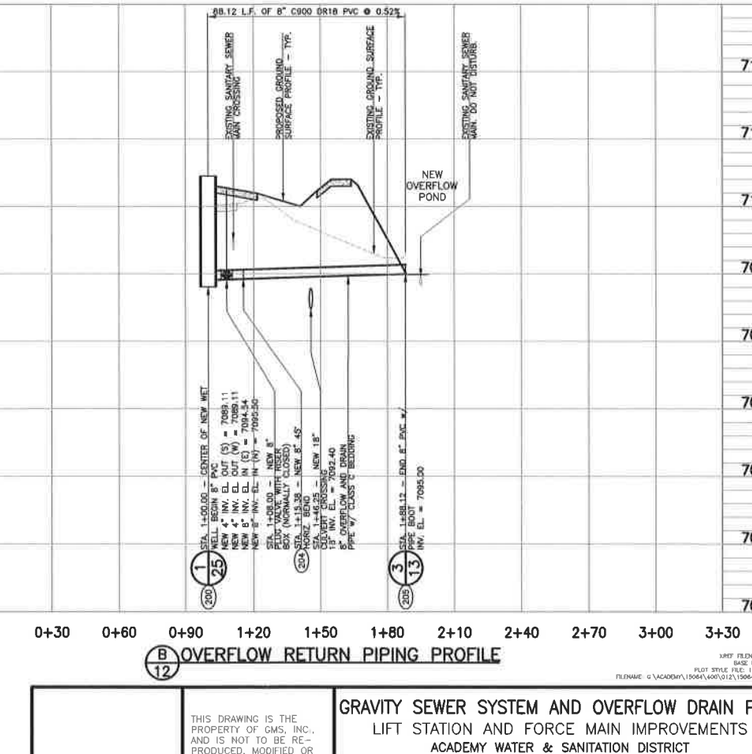
SHEET NOTE:
1. CONTRACTOR TO POTHOLE EXISTING YARD PIPING AT CROSSINGS WITH NEW PIPELINES TO VERIFY SIZE, LOCATION AND MATERIAL. IF ANY CONFLICTS ARE DISCOVERED, NOTIFY ENGINEER IMMEDIATELY FOR RESOLUTION.



2/12 OVERFLOW RETURN PIPING PLAN



1/12 GRAVITY SEWER PROFILE



B/12 OVERFLOW RETURN PIPING PROFILE

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BASE DWG: G:\
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FILENAME: G:\ACADDWF\15064\400\012\15064012.DWG

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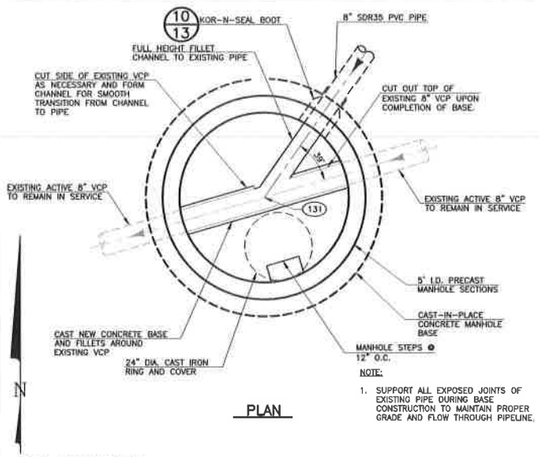
GRAVITY SEWER SYSTEM AND OVERFLOW DRAIN PIPE
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN	SKC
DESIGNED	MAM
CHECKED	EDM
DATE	JUNE 2017
PROJECT NO.	15064.400
GMS FILE NO.	2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

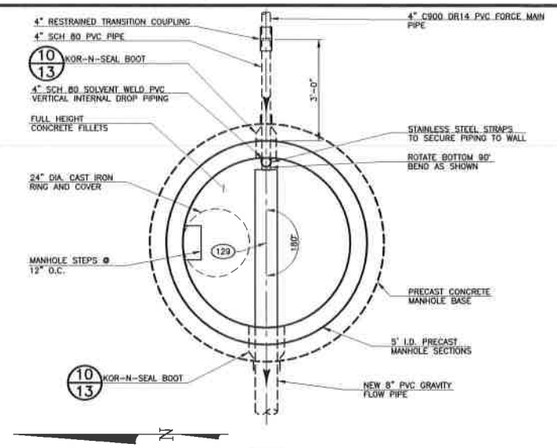
SHEET 12 OF 31



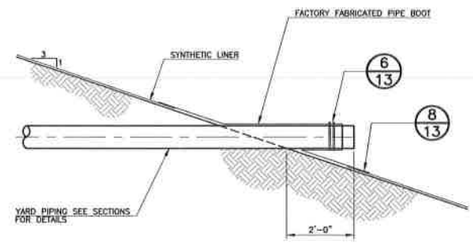
PLAN

NOTE:

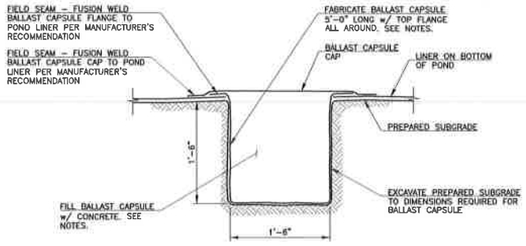
1. SUPPORT ALL EXPOSED JOINTS OF EXISTING PIPE DURING BASE CONSTRUCTION TO MAINTAIN PROPER GRADE AND FLOW THROUGH PIPELINE.



PLAN



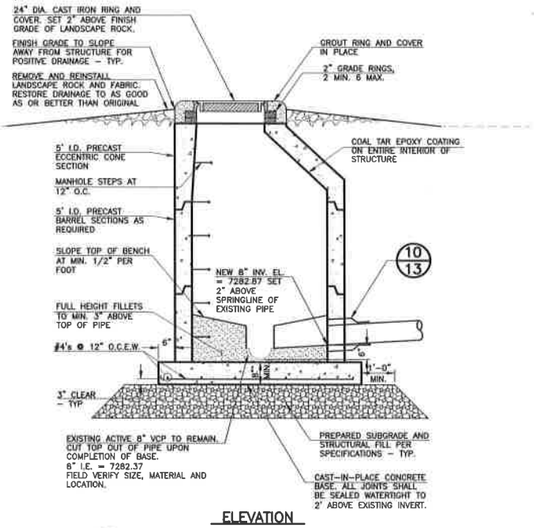
4/13 PIPE PENETRATION DETAIL
SCALE: NONE



NOTES:

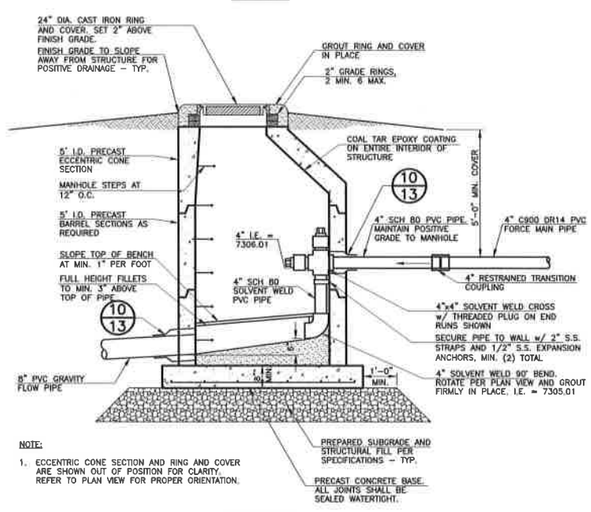
1. ALTERNATE SIZE AND DIMENSION OF BALLAST CAPSULE MAY BE PROPOSED TO SUIT FABRICATION CONDITIONS PROVIDED MINIMUM BALLAST MATERIAL WEIGHT OF 1,500 lbs. IS PROVIDED.
2. CONCRETE BALLAST MATERIAL SHALL BE CURED FOR 28 DAYS PRIOR TO FIELD SEAMING THE BALLAST CAPSULE CAP TO THE POND LINER.
3. ALTERNATE BALLAST MATERIAL MAY BE PROPOSED PROVIDED THE MINIMUM BALLAST MATERIAL WEIGHT OF 1,500 lbs. IS PROVIDED.

5/13 LINER BALLAST DETAIL
SCALE: NONE



ELEVATION

1/13 NEW MANHOLE STA. 43+71.29
SCALE: NONE

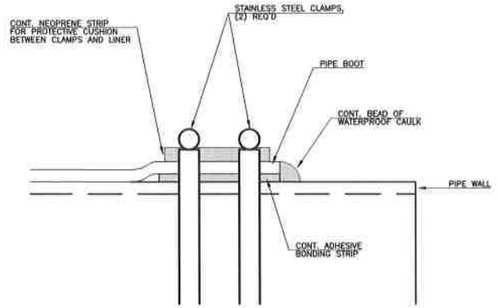


NOTE:

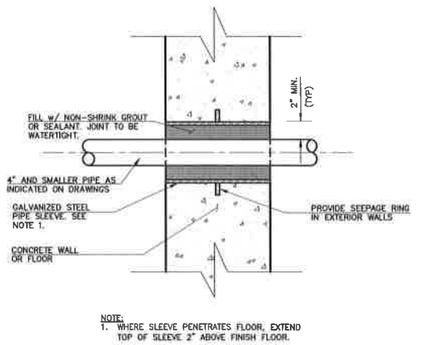
1. ECCENTRIC CONE SECTION AND RING AND COVER ARE SHOWN OUT OF POSITION FOR CLARITY. REFER TO PLAN VIEW FOR PROPER ORIENTATION.

ELEVATION

2/13 NEW FORCE MAIN DISCHARGE MANHOLE
SCALE: NONE



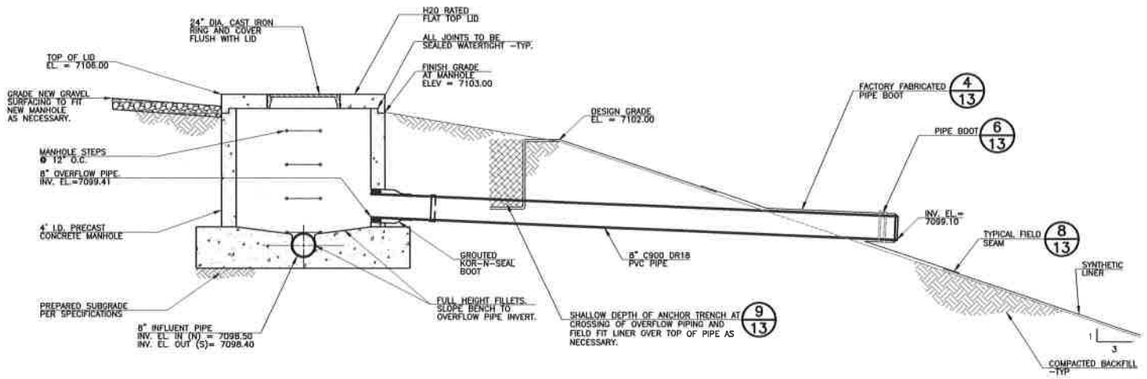
6/13 BOOT TO PIPE CONNECTION DETAIL
SCALE: NONE



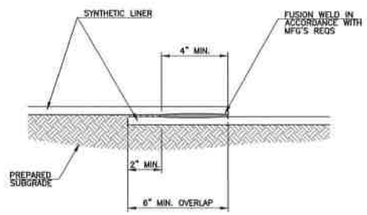
NOTE:

1. WHERE SLEEVE PENETRATES FLOOR, EXTEND TOP OF SLEEVE 2" ABOVE FINISH FLOOR.

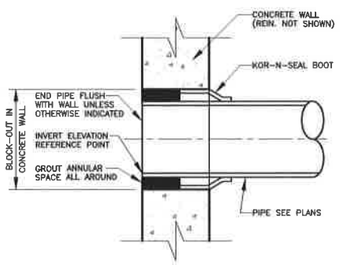
7/13 WALL PENETRATION DETAIL
SCALE: NONE



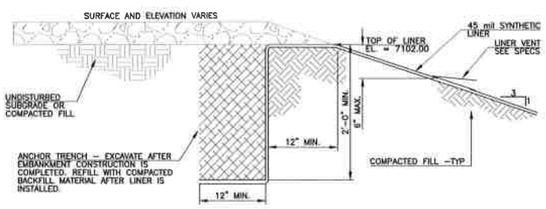
3/13 OVERFLOW PIPELINE AND MANHOLE DETAIL
SCALE: 1/2" = 1'-0"



8/13 TYPICAL FIELD SEAM DETAIL
SCALE: NONE



10/13 KOR-N-SEAL BOOT DETAIL
SCALE: NONE



9/13 TYPICAL LINER ANCHOR TRENCH DETAIL
SCALE: NONE

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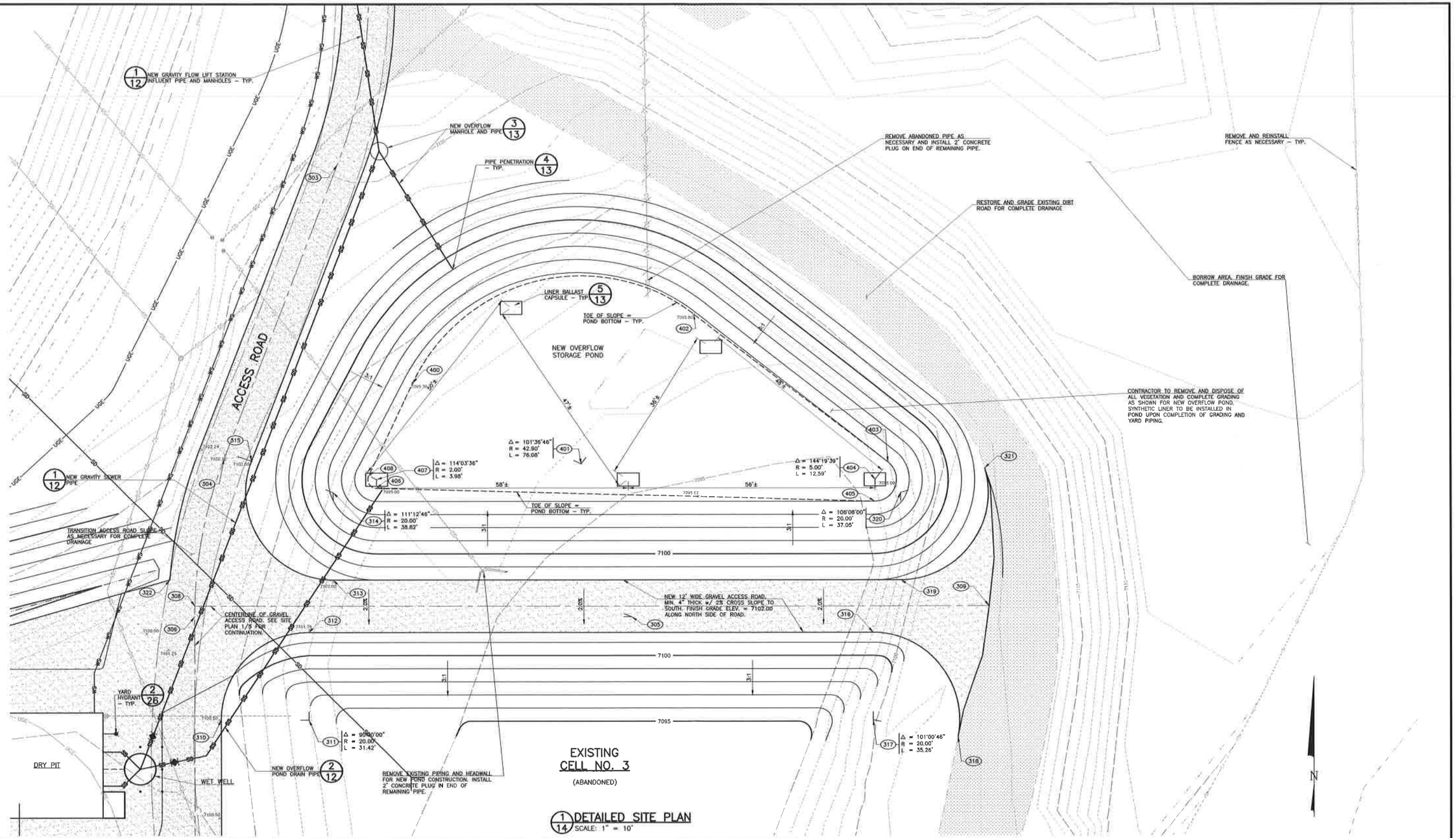
DETAILS

LIFT STATION AND FORCE MAIN IMPROVEMENTS

ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
CHECKED EDM
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903



1/14 DETAILED SITE PLAN
SCALE: 1" = 10'

(303) DRIVE AND POND COORDINATE TABLE

PT. NO.	NORTHING	EASTING	DESCRIPTION
303	23044.39	30252.02	DRIVE CENTERLINE PT
304	22977.52	30226.07	DRIVE CENTERLINE PC
305	22941.34	30319.30	DRIVE CENTERLINE RP
306	22941.34	30219.30	DRIVE CENTERLINE PT
308	22943.75	30219.32	DRIVE CENTERLINE INTERSECTION
309	22943.75	30401.35	END DRIVE CENTERLINE
310	22917.75	30225.30	DRIVE PC
311	22917.75	30245.30	DRIVE EDGE RP
312	22937.75	30245.30	DRIVE PC
313	22949.75	30250.95	DRIVE PC
314	22969.75	30250.95	DRIVE RP
315	22976.99	30232.30	DRIVE PC

(303) DRIVE AND POND COORDINATE TABLE

316	22937.75	30374.71	DRIVE PC
317	22917.75	30374.71	DRIVE EDGE RP
318	22913.93	30394.34	DRIVE PC
319	22949.75	30381.25	DRIVE PC
320	22969.75	30381.25	DRIVE EDGE RP
321	22975.31	30400.46	DRIVE PC
322	22949.75	30213.63	EDGE OF GRAVEL
400	22994.83	30269.16	POND TOE OF SLOPE
401	22976.32	30307.86	POND RP
402	23010.50	30333.78	POND TOE OF SLOPE
403	22976.74	30378.30	POND TOE OF SLOPE
404	22972.75	30375.28	POND RP
405	22967.76	30375.15	POND TOE OF SLOPE

(303) DRIVE AND POND COORDINATE TABLE

405	22970.76	30260.76	POND TOE OF SLOPE
407	22972.75	30260.82	POND RP
408	22973.62	30259.01	POND TOE OF SLOPE

OVERFLOW POND DETAILED GRADING PLAN
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

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PROJECT NO. 15064.400
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GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

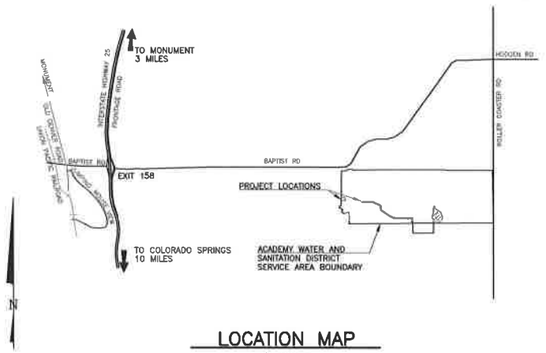
LIFT STATION AND FORCE MAIN IMPROVEMENTS

FOR

ACADEMY WATER & SANITATION DISTRICT

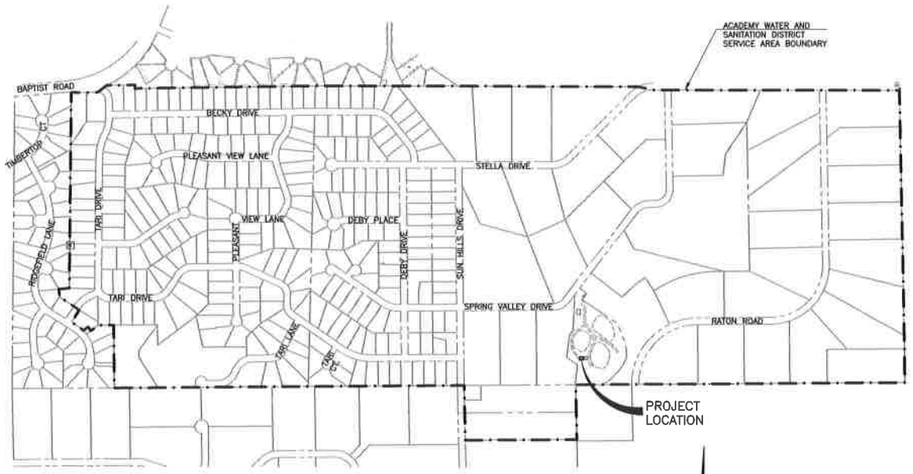
JUNE 2017

STORAGE BUILDING



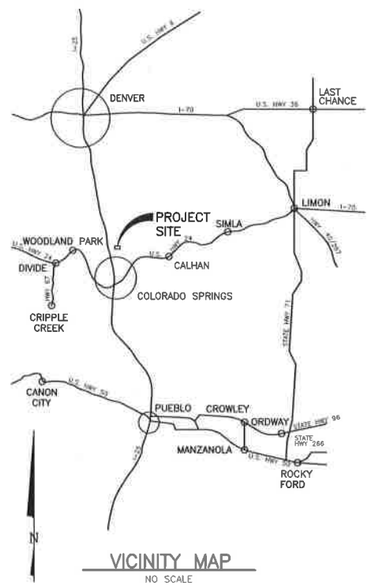
LOCATION MAP

NO SCALE



SITE MAP

SCALE: 1" = 2,000'



VICINITY MAP

NO SCALE

DRAWING INDEX FOR PPRBD SUBMITTAL

SHEET NO.	DESCRIPTION
15	STORAGE BUILDING COVER SHEET – PIKES PEAK REGIONAL BUILDING DEPARTMENT SUBMITTAL
16	STORAGE BUILDING SITE PLAN WITH BOUNDARY – PIKES PEAK REGIONAL BUILDING DEPARTMENT SUBMITTAL
17	STORAGE BUILDING STRUCTURAL GENERAL NOTES
18	STORAGE BUILDING ARCHITECTURAL ELEVATIONS AND DETAILS
19	STORAGE BUILDING STRUCTURAL PLANS AND DETAILS
27	DETAILS
28	ELECTRICAL ONE-LINE DIAGRAM SCHEDULE AND DETAILS
29	POWER AND LIGHTING PLAN, POWER PANELS AND EQUIPMENT SCHEDULES

PIKES PEAK REGIONAL BUILDING CODE INFORMATION

1. THESE PLANS HAVE BEEN PREPARED AND DRAWN TO MEET THE REQUIREMENTS OF THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE, THE 2009 EDITION OF THE INTERNATIONAL PLUMBING CODE, THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE, THE 2009 EDITION OF THE INTERNATIONAL MECHANICAL CODE, AND THE 2011 PPRBD COMMERCIAL BUILDING CODES.
2. STORAGE BUILDING

   ADDRESS: **---- SPRING VALLEY DRIVE**
   STRUCTURE AREA: 720 S.F.
   USE AND OCCUPANCY: GROUP S
   CONSTRUCTION TYPE: V-B
3. STRUCTURAL DESIGN NOTES:
   a. SEE SHEET 16 FOR ALL STRUCTURAL GENERAL DESIGN NOTES
4. THE FACILITY IS NOT ACCESSIBLE BY THE GENERAL PUBLIC. A CONTINUOUS PERIMETER SECURITY FENCE IS INSTALLED AROUND THE ENTIRE FACILITY PROPERTY. ACCESS WILL BE CONTROLLED BY THE OPERATIONS PERSONNEL THROUGH A LOCKED GATE IN THE PERIMETER FENCE.
5. THE FOLLOWING BUILDINGS ARE UNMANNED STRUCTURES. ACCESS TO THESE BUILDINGS ARE LIMITED TO OPERATION AND MAINTENANCE PERSONNEL ONLY.
   a. STORAGE BUILDING
   b. LIFT STATION DRY PIT AND ACCESS BUILDING

FACILITY ADDRESS:
---- SPRING VALLEY DRIVE
(SEE SHEET 15)
COLORADO SPRINGS, CO. 80921

EL PASO COUNTY ASSESSOR'S SCHEDULE NO.: 61320-01-024

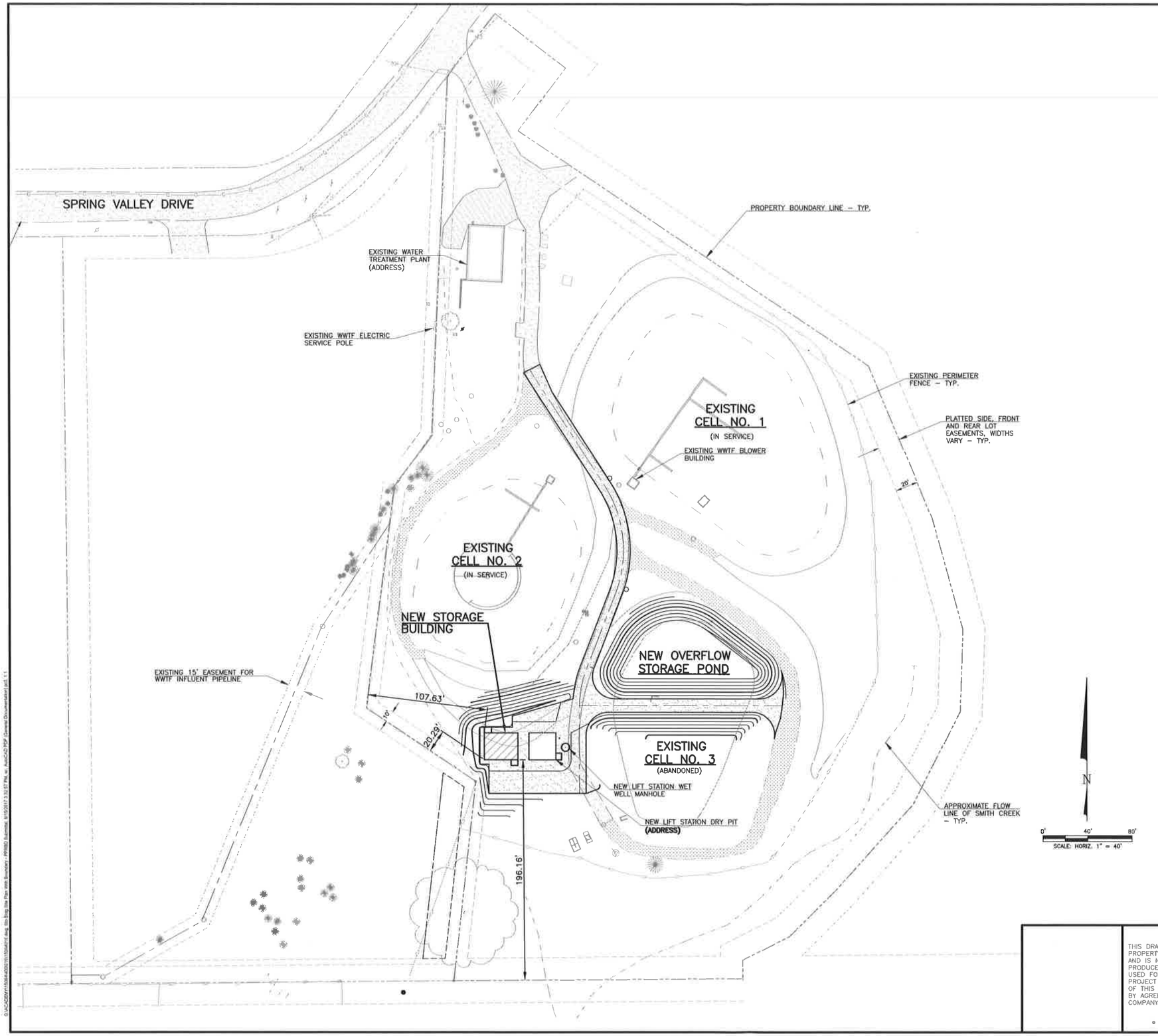
LEGAL DESCRIPTION:
PARCEL DESCRIBED AS LOT 2 OF PLEASANT VIEW ESTATES FILING NO. 5A AND RECORDED IN EL PASO COUNTY CLERK AND RECORDER RECORDS UNDER RECEPTION NO. 95118406 (SEE SHEET 15 FOR COMPLETE LEGAL DESCRIPTION)

GMS, INC.
611 NORTH WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

ACADEMY WATER AND SANITATION DISTRICT
PROPERTY LEGAL DESCRIPTION

Lot 2, PLEASANT VIEW ESTATES FILING NO. 5A as recorded under Reception No. 95118406 and amended by SURVEYOR'S STATEMENT recorded under Reception No. 096065041, all in the records of El Paso County, Colorado.

NEW STORAGE BUILDING ADDRESS:
—— SPRING VALLEY DRIVE
COLORADO SPRINGS, CO. 80921



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FILENAME: G:\ACADEMY\1806\PLANS\SERV\1806A016.dwg

STORAGE BUILDING SITE PLAN WITH BOUNDARY – PIKES PEAK REGIONAL BUILDING DEPT. SUBMITTAL

LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN	SKC
DESIGNED	MAM
CHECKED	RJS
DATE	JUNE 2017
PROJECT NO.	15064.400
GMS FILE NO.	2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

STRUCTURAL DESIGN & CONSTRUCTION NOTES

(NOTES GIVEN HEREUNDER APPLY TO THE STORAGE BUILDING)

DESIGN CRITERIA

1. DESIGN LIVE LOADS ARE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2009 EDITION, WITH THE FOLLOWING MINIMUM CRITERIA:

   PROJECT IS AN OCCUPANCY CATAGORY III STRUCTURE

   FLOOR LOADS:

OCCUPANCY OR USE:	LIVE LOAD:	CONCENTRATED LOAD:
FLOORS (UNLESS NOTED OTHERWISE)	150 p.s.f.	4000 lbs.

   SNOW LOADS:

   ROOF DESIGN SNOW LOAD, Pf (NON-REDUCIBLE) ..... 40 p.s.f.
   EXPOSURE FACTOR, C_e 1.0
   IMPORTANCE FACTOR, I_s 1.1
   THERMAL FACTOR, C_t 1.0
   GROUND SNOW LOAD, P_g ..... 30 p.s.f.

   SEISMIC LOADS:

   IMPORTANCE FACTOR, I_E 1.25

   MAPPED SPECTRAL RESPONSE ACCELERATIONS:
   S_S 0.185
   S_1 ..... 0.059
   SITE CLASS ..... E
   SPECTRAL RESPONSE COEFFICIENTS:
   S_{DS} 0.310
   S_{D1} 0.140

   SEISMIC DESIGN CATEGORY C

   BASIC SEISMIC-FORCE-RESISTING SYSTEMS: LIGHT FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS

   DESIGN BASE SHEAR: ..... 1.50 KIP
   RESPONSE MODIFICATION FACTOR, R: 6.5
   ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

   WIND LOADS:

   BASIC WIND SPEED (3-SECOND GUST): ..... 100 m.p.h.
   WIND EXPOSURE C
   IMPORTANCE FACTOR, Iw 1.15
   INTERNAL PRESSURE COEFFICIENT, GC_{pi} ..... ±0.18

   FLOOD LOADS:

   NOT IN FLOOD HAZARD ZONE

2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE LOCATION OF MECHANICAL OPENINGS, FLOOR DRAINS, INSERTS, DEPRESSIONS, BURIED CABLES AND UTILITIES, ETC. WITH ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.

3. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS, NOTIFY ENGINEER OF DISCREPANCIES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.

SOILS AND FOUNDATIONS

1. FOUNDATION DESIGN IS IN ACCORDANCE WITH THE SOIL REPORT BY ENTECH ENGINEERING, INC, NUMBER 160452, DATED MARCH 3, 2016.

2. DESIGN OF FOOTINGS AND WALLS IS BASED ON FOLLOWING CRITERIA:
   MAXIMUM ALLOWABLE SOIL BEARING PRESSURE ..... 2,400 p.s.f.

3. SOIL BENEATH FOOTING SHALL BE SOLID UNDISTURBED NATIVE MATERIAL FREE OF WATER, FROST OR FOREIGN DEBRIS; OR GRANNULAR NONEXPANSIVE STRUCTURAL FILL COMPACTED IN ACCORDANCE WITH THE SOILS REPORT AND SPECIFICATIONS WITH MINIMUM DENSITY AS FOLLOWS:
   FOOTING: 98% OF STANDARD PROCTOR, ASTM D698 OR 95% MODIFIED PROCTOR.

4. SOIL BENEATH SLABS-ON-GRADE SHALL BE SOLID UNDISTURBED NATIVE MATERIAL FREE OF WATER, FROST OR FOREIGN DEBRIS; OR GRANNULAR, NON-EXPANSIVE STRUCTURAL FILL COMPACTED IN ACCORDANCE WITH THE SOILS REPORT AND SPECIFICATIONS WITH MINIMUM DENSITY AS FOLLOWS:
   SLABS-ON-GRADE: 95% OF MODIFIED PROCTOR, ASTM D1557.

5. A REPRESENTATIVE OF THE SOILS ENGINEER SHALL INSPECT THE OPEN EXCAVATION TO DETERMINE THAT THE SOIL TYPE AND CONDITIONS ARE CONSISTENT WITH DESIGN CRITERIA OF THE SOILS REPORT. IF THE SOIL PROPERTIES ARE FOUND TO BE DIFFERENT FROM THIS CRITERIA, THEN THE ENGINEER SHALL BE PROMPTLY NOTIFIED SO THAT THE FOUNDATION DESIGN MAY BE REVIEWED.

CONCRETE:

1. ALL CONCRETE DESIGN, MATERIALS AND CONSTRUCTION SHALL CONFORM TO ACI STANDARD 318-08, THE INTERNATIONAL BUILDING CODE, 2009 EDITION, THE CRSI MANUAL OF STANDARD PRACTICE (CURRENT EDITION) AND THE PROJECT SPECIFICATIONS.

2. MATERIAL SPECIFICATIONS:
   REINFORCING BARS ..... ASTM A615, GR. 60
   WELDED WIRE FABRIC ..... ASTM A185

3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS AS FOLLOWS:

   A. GENERAL STRUCTURAL CONCRETE
   FOOTING & STEM WALLS ..... 4000 p.s.i. CEMENT TYPE I/II
   SLABS-ON-GRADE ..... 4000 p.s.i. CEMENT TYPE I/II
   (WITH 1.5 lbs OF FIBERMESH PER CUBIC YARD)

4. REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH THE ACI DETAILING MANUAL, LATEST EDITION. FORMWORK SHALL BE DESIGNED, ERECTED AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS.

5. REINFORCEMENT SHALL BE PLACED SO THAT THE FOLLOWING MINIMUM CONCRETE PROTECTION IS PROVIDED, UNLESS NOTED OTHERWISE.

   CONCRETE SURFACES POURED AGAINST GROUND ..... 3" CLEAR

   FORMED SURFACES EXPOSED TO GROUND OR WEATHER
   BARS #6 AND LARGER ..... 2" CLEAR
   BARS #5 AND SMALLER ..... 1-1/2" CLEAR
   SLABS-ON-GRADE ..... AT CENTERS

6. REINFORCEMENT SHALL BE SECURELY TIED AND SHALL BE SUPPORTED WITH METAL CHAIRS OR HUNG FROM FORMS.

7. CONTINUOUS HORIZONTAL BARS AND CORNER BARS IN FOOTINGS, STEM WALLS AND SLABS SHALL BE LAPPED AS FOLLOWS AT SPLICES. SPLICE LOCATIONS SHALL BE STAGGERED WHERE POSSIBLE.

CONCRETE COMPRESSIVE STRENGTH	No. 6 BARS & SMALLER	No. 7 BARS & LARGER
4000 p.s.i	38 d_b	48 d_b

(WHERE d_b = BAR DIAMETERS)

8. ADDITIONAL (2) #6 BARS (ONE EACH FACE) WITH A 2'-0" PROJECTION SHALL BE PLACED DIAGONALLY ACROSS THE CORNERS OF ALL OPENINGS AND VERTICAL STEPS IN WALLS.

9. STEM WALLS BELOW GRADE SHALL HAVE BACKFILL PLACED EQUALLY ON BOTH SIDES UNTIL THE REQUIRED LEVELS ARE REACHED.

10. CONSTRUCTION JOINTS IN SLABS ON GRADE SHALL BE SPACED AT INTERVALS ENCLOSING NO MORE THAN 144 SQUARE FEET WITH A MAXIMUM OF 12 FEET IN ANY ONE DIRECTION UNLESS OTHERWISE NOTED ON DRAWINGS. CONSTRUCTION JOINTS SHALL BE FORMED WITH METAL LOAD KEY JOINT SUPPLIED BY JAHN CONCRETE PRODUCTS OR APPROVED EQUAL. FOR CONSTRUCTION JOINTS IN SLABS 6" AND THICKER PROVIDE 1 INCH DIAMETER X 24" LONG SMOOTH DOWELS AT 18" ON CENTER OILED ONE END. REFER TO PROJECT MANUAL FOR SEALING OF CONSTRUCTION JOINTS.

11. KEYWAYS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS IN STEM WALLS.

12. CONTROL JOINTS IN SLABS MAY BE TOOLED OR SAWCUT AS INDICATED ON THE DRAWINGS.

13. ALL JOINTS SHALL BE APPROVED BY THE ENGINEER.

WOOD:

1. ALL LUMBER MATERIALS, FABRICATION AND CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE 2009 EDITION, THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, ALONG WITH ITS SUPPLEMENT OF WOOD DESIGN VALUES, LATEST EDITION AND THE PROJECT SPECIFICATIONS.

2. ALL DIMENSION LUMBER (2" TO 4" THICK) SHALL BE HEM FIR #2 OR BETTER WITH THE FOLLOWING MINIMUM ALLOWABLE STRESSES (NORMAL LOADING CONDITIONS AND SINGLE MEMBER USES):

   EXTREME FIBER IN BENDING Fb ..... 850 psi
   HORIZONTAL SHEAR Fv ..... 75 psi
   COMPRESSION PERPENDICULAR TO GRAIN Fc⊥ ..... 405 psi
   COMPRESSION PARALLEL TO GRAIN Fc ..... 1,300 psi
   MODULUS OF ELASTICITY E ..... 1,300,000 psi

3. ALL PLYWOOD SHEATHING SHALL BEAR THE STAMP OF THE AMERICAN PLYWOOD ASSOCIATION (APA). PLYWOOD SHALL HAVE THE FOLLOWING SPAN RATINGS:

ROOFS	SPAN RATING
5/8" PLYWOOD (STRUCTURAL I)	40/20
WALLS	
1/2" PLYWOOD (STRUCTURAL I)	32/16

4. PROVIDE TRUSS ENGINEERING AND TRUSS SHOP DRAWINGS PER SPECIFICATIONS. TRUSS MANUFACTURER SHALL DESIGN AND PROVIDE ALL TRUSS TO TRUSS CONNECTORS.

5. MISCELLANEOUS FRAMING CLIPS, ANCHORS AND HANGERS SHALL BE PROVIDED AS NECESSARY TO ERECT A RIGID STRUCTURAL FRAMEWORK. ALL CONNECTORS REFER TO SIMPSON STRONG TIE COMPANY. EQUAL CONNECTORS MAY BE UTILIZED PROVIDED THEY HAVE EQUIVALENT CAPACITIES.

6. ALL BUILT-UP MEMBERS OF TWO PIECES SHALL BE NAILED TOGETHER WITH A MINIMUM OF FOUR (4) 10d COMMON NAILS PER FOOT. ALL BUILT-UP MEMBERS OF MORE THAN TWO PIECES SHALL BE BOLTED TOGETHER WITH 1/2" DIAMETER AT 24" O.C. (COUNTER SINK AS REQUIRED) WITH A MINIMUM OF THREE (3) BOLTS PER BEAM.

7. ROOF PLYWOOD SHEATHING SHALL BE NAILED AT ALL PLYWOOD PANEL EDGES WITH 10d COMMON NAILS AT 6" O.C. ALL PLYWOOD PANEL EDGES SHALL BE BLOCKED. NAIL TO INTERMEDIATE SUPPORTS WITH 10d COMMON NAILS AT 10" O.C.

8. WALL PLYWOOD SHEATHING SHALL BE NAILED AT ALL PLYWOOD PANEL EDGES WITH 10d COMMON NAILS AT 6" O.C. NAIL TO INTERMEDIATE SUPPORTS WITH 10d COMMON NAILS AT 10" O.C.

9. ALL NAILING SHALL CONFORM TO CHAPTER 23 OF THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE.

STRUCTURAL STEEL:

1. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36.

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BASE DWG: G:\
PLOT STYLE FILE: 10500 CTB
FILENAME: G:\ACADSWG\15064\ARB\STR\15064017.DWG

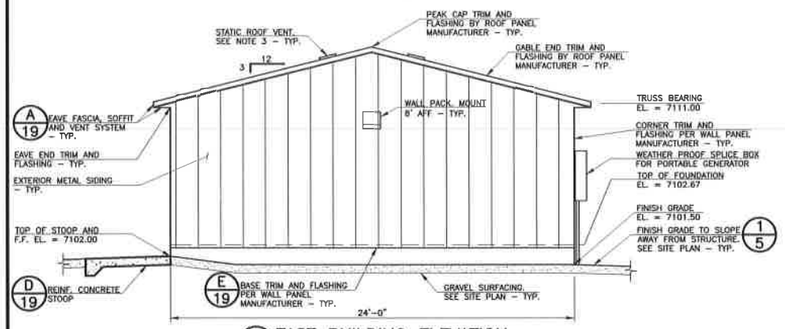
STORAGE BUILDING STRUCTURAL GENERAL NOTES

LIFT STATION AND FORCE MAIN IMPROVEMENTS

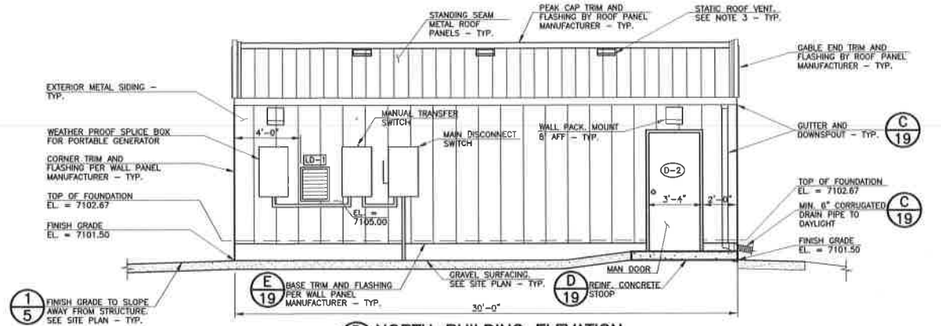
ACADEMY WATER & SANITATION DISTRICT

DRAWN	SKC
DESIGNED	MAM
CHECKED	RJS
DATE	JUNE 2017
PROJECT NO.	15064.400
GMS FILE NO.	2801

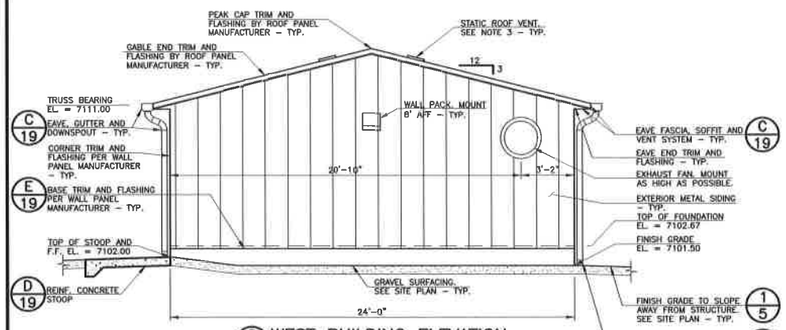
GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903



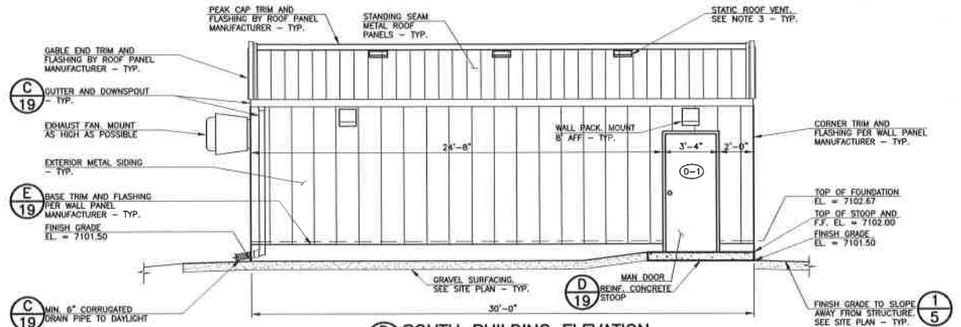
A 18 EAST BUILDING ELEVATION
SCALE: 1/4" = 1'-0"



B 18 NORTH BUILDING ELEVATION
SCALE: 1/4" = 1'-0"



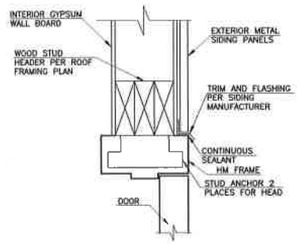
C 18 WEST BUILDING ELEVATION
SCALE: 1/4" = 1'-0"



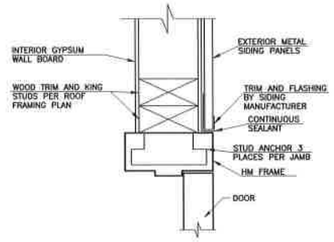
D 18 SOUTH BUILDING ELEVATION
SCALE: 1/4" = 1'-0"

ARCHITECTURAL ELEVATION NOTES:

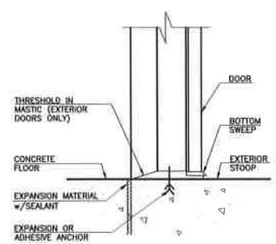
1. ALL BUILDING TRIM AND FLASHING SHALL BE INSTALLED WITH THE CLOSURES AND SEALANT RECOMMENDED BY THE PANEL MANUFACTURER.
2. REFER TO ARCHITECTURAL SCHEDULES FOR DOOR REQUIREMENTS.
3. STATIC ROOF VENTS SHALL BE EQUALLY SPACED ALONG THE TOP OF ROOF PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE THE TOTAL NUMBER OF VENTS REQUIRED FOR A MINIMUM TOTAL FREE AREA OF VENTILATION IF 5.0 SQUARE FEET.



2 18 HEAD
SCALE: NONE



3 18 JAMB
SCALE: NONE



4 18 SILL
SCALE: NONE

1 18 STORAGE BUILDING ARCHITECTURAL PLAN
SCALE: 1/4" = 1'-0"

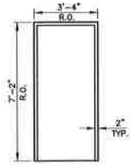
NOTES:

1. SEE ELECTRICAL DRAWINGS FOR DETAILS ON LIGHTING, POWER AND HVAC EQUIPMENT.
2. SEE ARCHITECTURAL SCHEDULES AND DETAILS FOR DOOR AND FINISH REQUIREMENTS.
3. REFER TO PROJECT MANUAL FOR HARDWARE SPECIFICATIONS.
4. PROVIDE EXIT SIGN OVER DOORS AS INDICATED:
   - MINIMUM SIZE = 10"x14"
   - VINYL CONSTRUCTION
   - ADHESIVE MOUNTING TO WALL
   - RED LETTERS ON WHITE BACKGROUND
   - MINIMUM LETTER SIZE = 6" HIGH x 2" WIDE (EXCEPT "I")
   - ACCUFORM SIGNS MODEL MEXTO6VS OR EQUAL
   - PROVIDE 12"x16"x1/16" ALUMINUM PLATE FOR MOUNTING IF WALL IS NOT SUITABLE TO PROVIDE CODE COMPLIANT SIGNAGE.
5. THERE WILL BE NO WINDOWS IN THE STORAGE BUILDING.
6. ALL DOWNSPOUTS SHALL HAVE DRAIN PIPE EXTENDING TO EXISTING DITCH PER SITE PLAN.

DOOR SCHEDULE									
TAG	WIDTH	HEIGHT	TYPE	HAND	HARDWARE SET	HEAD	JAMB	SILL	COMMENT
D-1	3'-0"	7'-0"	A	LHR	A	1	2	3	LOCKSET SHALL BE ANSI F13 ENTRANCE FUNCTION.
D-2	3'-0"	7'-0"	A	RHR	A	1	2	3	LOCKSET SHALL BE ANSI F13 ENTRANCE FUNCTION.

NOTES:

1. ROUGH OPENING (R.O.) DIMENSIONS SHOWN ARE NOMINAL. VERIFY EXACT DIMENSIONS REQUIRED FOR EACH DOOR WITH DOOR AND FRAME MANUFACTURER.
2. REFER TO PROJECT MANUAL FOR HARDWARE SPECIFICATIONS.
3. INTERIOR FINISHES SHALL BE:
   FLOOR: CONCRETE, SEALED
   WALLS: GYPSUM WALL BOARD, TEXTURED AND PAINTED OFF-WHITE
   CEILING: GYPSUM WALL BOARD, TEXTURED AND PAINTED OFF-WHITE



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STORAGE BUILDING ARCHITECTURAL ELEVATIONS AND DETAILS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
CHECKED RJS
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET 18 OF 31

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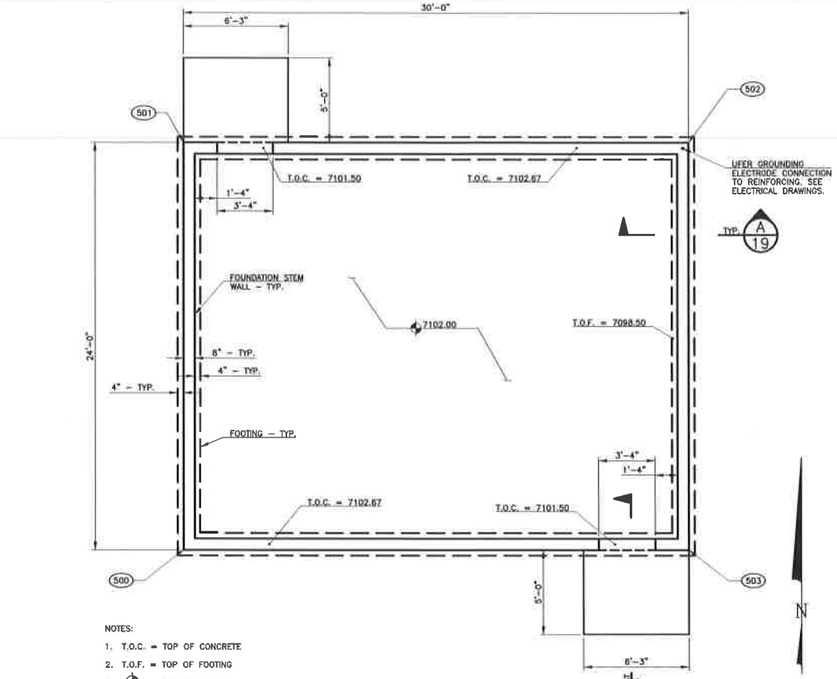
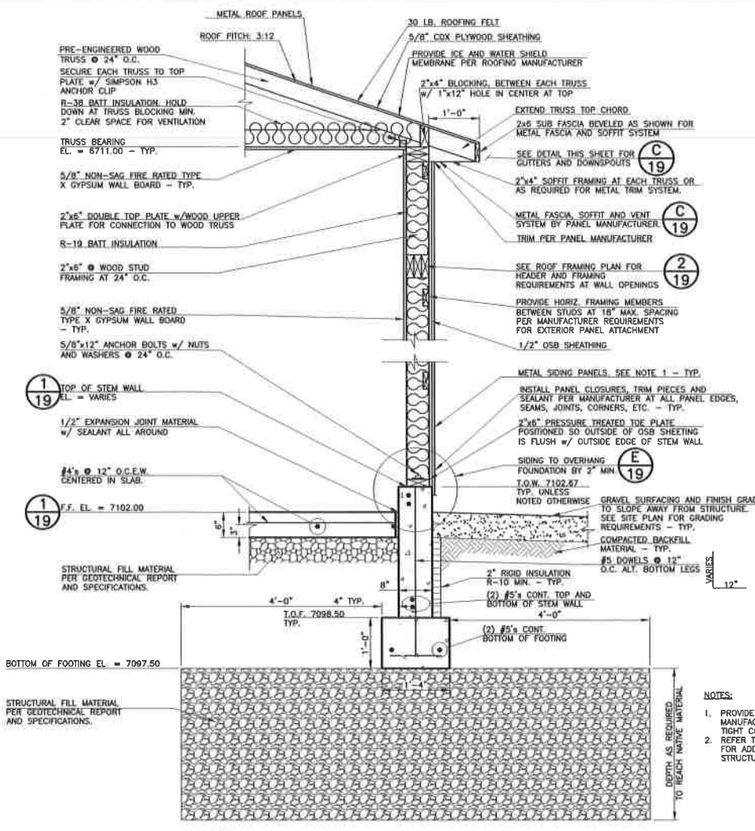


NOTES:

1. T.O.C. = TOP OF CONCRETE
2. T.O.F. = TOP OF FOOTING
3. ⌖ = TOP OF SLAB

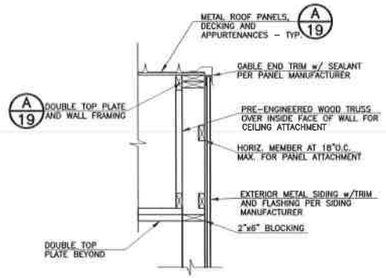
1/19 FOUNDATION AND FLOOR PLAN
SCALE: 1/4" = 1'-0"



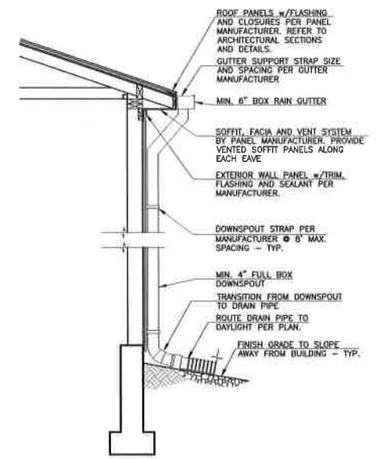
NOTES:

1. PROVIDE TRIM, FLASHING AND SEALANT PER SIDING MANUFACTURER AT ALL WALL OPENINGS FOR WEATHER TIGHT CONSTRUCTION.
2. REFER TO GEOTECHNICAL REPORT AND PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS ON FILL BENEATH STRUCTURES.

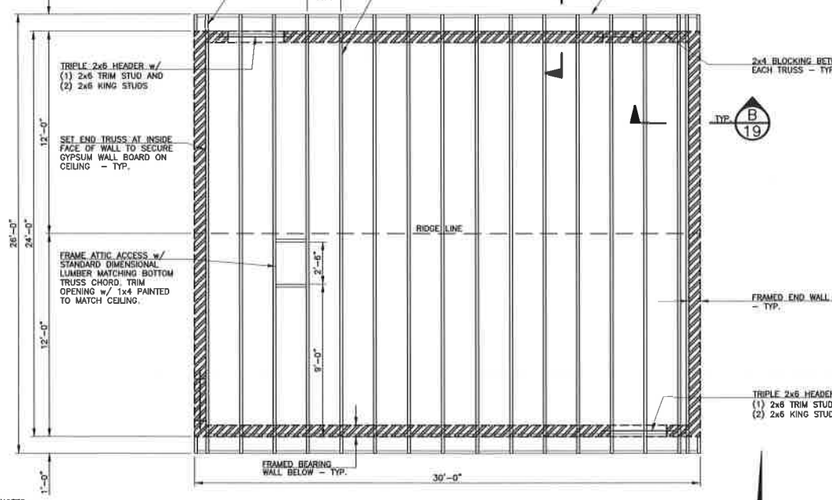
A/19 TYPICAL STORAGE BUILDING WALL SECTION
SCALE: NONE



B/19 END WALL SECTION
SCALE: NONE



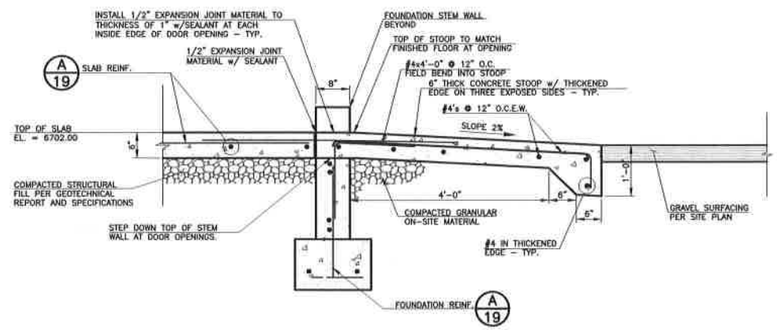
C/19 EAVE, GUTTER AND DOWNSPOUT SECTION
SCALE: 1/2" = 1'-0"



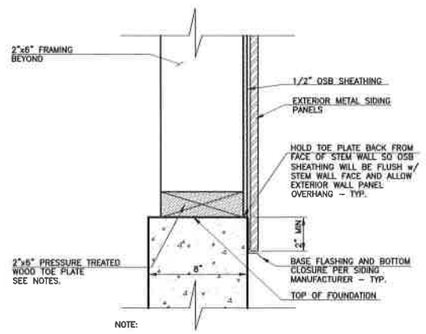
NOTES:

1. ROOF DECK IS 5/8" CDX PLYWOOD.
2. ROOF TRUSSES SHALL BE DESIGNED FOR THE LOADS AND CONDITIONS GIVEN IN THE STRUCTURAL GENERAL NOTES.
3. ALL TRIM STUDS AT WALL OPENINGS SHALL BE CONTINUOUS FROM HEADER TO TOE PLATE AND ALL KING STUDS SHALL BE CONTINUOUS FROM TOP PLATE TO TOE PLATE.
4. THE PRE-ENGINEERED TRUSS SUPPLIER SHALL PROVIDE A COMPLETE SUBMITTAL PACKAGE FOR ALL COMPONENTS OF THE WOOD TRUSSES, INCLUDING STRUCTURAL DESIGN CALCULATIONS SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER, COMPLETE FABRICATION DETAILS, MATERIALS LISTS, LAYOUT DRAWINGS, DETAILED INSTALLATION DRAWINGS AND APPLICABLE MATERIAL AND COATING SPECIFICATIONS. ALL COMPONENTS SHALL BE DESIGNED, FABRICATED AND INSTALLED ACCORDING TO THE REGULATIONS OF THE PIKES PEAK REGIONAL BUILDING DEPARTMENT AND THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE.
5. PROVIDE APPROVED TRUSS SUBMITTAL PACKAGE TO PIKES PEAK REGIONAL BUILDING DEPARTMENT FOR REVIEW A MINIMUM OF ONE WEEK PRIOR TO THE FRAMING INSPECTION.

2/19 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



D/19 CONCRETE STOOP SECTION
SCALE: NONE



NOTE:

1. ANCHOR BOLTS, NUTS AND WASHERS NOT SHOWN FOR CLARITY.

E/19 SECTION
SCALE: NONE

STORAGE BUILDING STRUCTURAL PLANS AND DETAILS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN	SKC
DESIGNED	MAM
CHECKED	RJS
DATE	JUNE 2017
PROJECT NO.	15064.400
GMS FILE NO.	2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET 19 OF 31

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PLOT STYLE FILE: ASSOC.ctb
FILENAME: G:\ACADEMY\15064\400\019\15064019.dwg

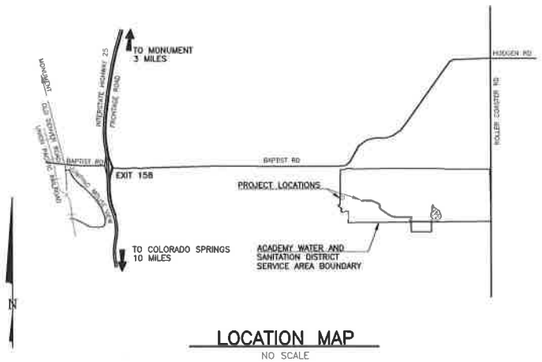
LIFT STATION AND FORCE MAIN IMPROVEMENTS

FOR

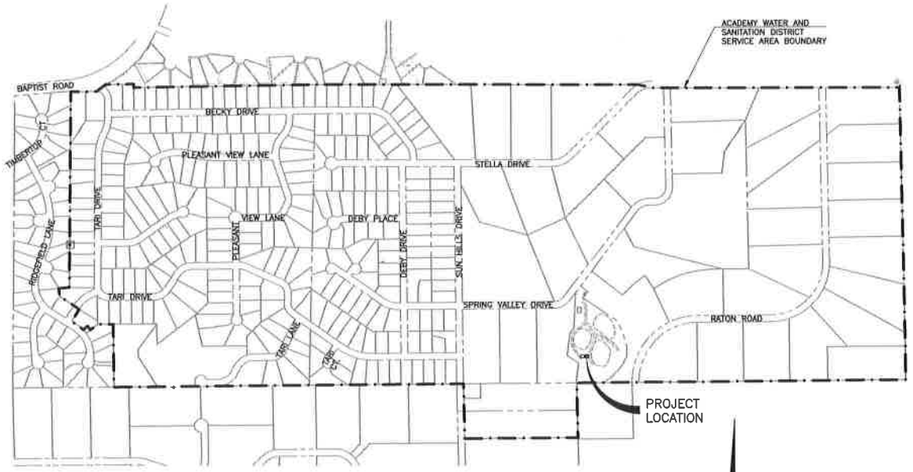
ACADEMY WATER & SANITATION DISTRICT

JUNE 2017

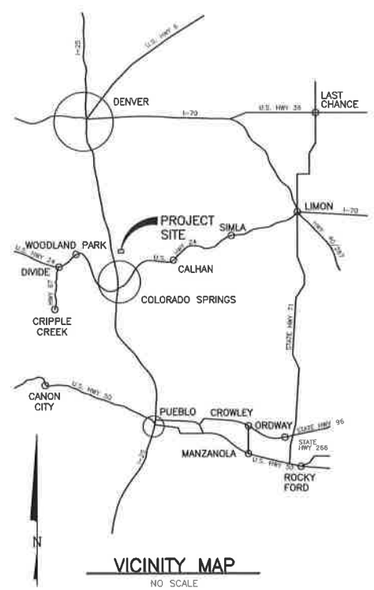
LIFT STATION DRY PIT ACCESS BUILDING



LOCATION MAP
NO SCALE



SITE MAP
SCALE: 1" = 2,000'



VICINITY MAP
NO SCALE

DRAWING INDEX

SHEET NO.	DESCRIPTION
20	LIFT STATION DRY PIT ACCESS BUILDING COVER SHEET – PIKES PEAK REGIONAL BUILDING DEPARTMENT SUBMITTAL
21	LIFT STATION DRY PIT ACCESS BUILDING SITE PLAN WITH BOUNDARY – PIKES PEAK REGIONAL BUILDING DEPARTMENT SUBMITTAL
22	LIFT STATION DRY PIT ACCESS BUILDING STRUCTURAL GENERAL NOTES
23	LIFT STATION DRY PIT ACCESS BUILDING ARCHITECTURAL ELEVATIONS AND DETAILS
24	LIFT STATION DRY PIT ACCESS BUILDING STRUCTURAL PLANS AND DETAILS
25	LIFT STATION DRY PIT ACCESS BUILDING STRUCTURAL DETAILS AND SECTIONS
26	LIFT STATION PIPING PLAN AND SECTIONS
27	DETAILS
28	ELECTRICAL ONE–LINE DIAGRAM SCHEDULE AND DETAILS
29	POWER AND LIGHTING PLAN, POWER PANELS AND EQUIPEMENT SCHEDULES

PIKES PEAK REGIONAL BUILDING CODE INFORMATION

1. THESE PLANS HAVE BEEN PREPARED AND DRAWN TO MEET THE REQUIREMENTS OF THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE, THE 2009 EDITION OF THE INTERNATIONAL PLUMBING CODE, THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE, THE 2009 EDITION OF THE INTERNATIONAL MECHANICAL CODE, AND THE 2011 PPRBD COMMERCIAL BUILDING CODES.

2. LIFT STATION DRY PIT ACCESS BUILDING

   ADDRESS: **---- SPRING VALLEY DRIVE**
   STRUCTURE AREA:
   LOWER LEVEL = 576 S.F.
   ACCESS BUILDING = 148 S.F.
   USE AND OCCUPANCY: UTILITY GROUP U
   CONSTRUCTION TYPE: V–B

3. STRUCTURAL DESIGN NOTES:
   a. SEE SHEET 21 FOR ALL STRUCTURAL GENERAL DESIGN NOTES

4. THE FACILITY IS NOT ACCESSIBLE BY THE GENERAL PUBLIC. A CONTINUOUS PERIMETER SECURITY FENCE IS INSTALLED AROUND THE ENTIRE FACILITY PROPERTY. ACCESS WILL BE CONTROLLED BY THE OPERATIONS PERSONNEL THROUGH A LOCKED GATE IN THE PERIMETER FENCE.

5. THE FOLLOWING BUILDINGS ARE UNMANNED STRUCTURES. ACCESS TO THESE BUILDINGS ARE LIMITED TO OPERATION AND MAINTENANCE PERSONNEL ONLY.
   a. STORAGE BUILDING
   b. LIFT STATION DRY PIT AND ACCESS BUILDING

FACILITY ADDRESS:
---- SPRING VALLEY DRIVE
(SEE SHEET 20)
COLORADO SPRINGS, CO. 80921

EL PASO COUNTY ASSESSOR'S SCHEDULE NO.: 61320–01–024

LEGAL DESCRIPTION:
PARCEL DESCRIBED AS LOT 2 OF PLEASANT VIEW ESTATES FILING NO. 5A AND RECORDED IN EL PASO COUNTY CLERK AND RECORDER RECORDS UNDER RECEPTION NO. 95118406 (SEE SHEET 20 FOR COMPLETE LEGAL DESCRIPTION)

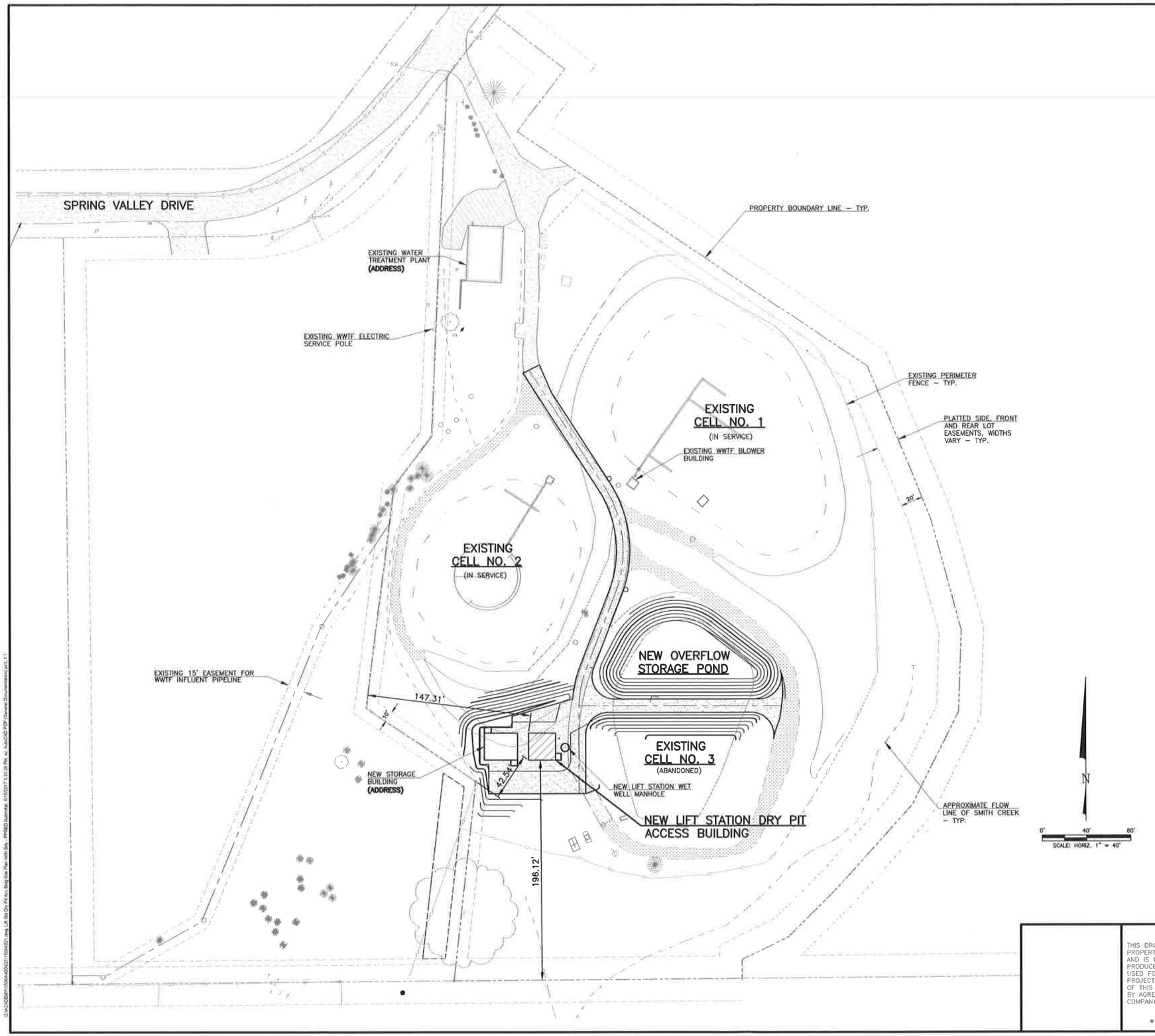
GMS, INC.
611 NORTH WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

PLOT CONFIGURATION: 8WG-STANDARD(GMS SCREEN)
CAD FILENAME: S:\ACADEMY\LIFTSTA\ADD'L\SUBMITTALS\COVER.DWG

ACADEMY WATER AND SANITATION DISTRICT
PROPERTY LEGAL DESCRIPTION

Lot 2, PLEASANT VIEW ESTATES FILING NO. 5A as recorded under Reception No. 95118406 and amended by SURVEYOR'S STATEMENT recorded under Reception No. 096065041, all in the records of El Paso County, Colorado.

NEW LIFT STATION DRY PIT ACCESS BUILDING ADDRESS:
---- SPRING VALLEY DRIVE
COLORADO SPRINGS, CO. 80921



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LIFT STATION DRY PIT ACCESS BUILDING
SITE PLAN WITH BOUNDARY –
PIKES PEAK REGIONAL BUILDING DEPT. SUMITTAL
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
CHECKED RJS
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

STRUCTURAL DESIGN & CONSTRUCTION NOTES

(NOTES GIVEN HEREUNDER APPLY TO THE LIFT STATION)

DESIGN CRITERIA

1. DESIGN LIVE LOADS ARE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2009 EDITION, WITH THE FOLLOWING MINIMUM CRITERIA:

   PROJECT IS AN OCCUPANCY CATEGORY III STRUCTURE

   FLOOR LOADS:

OCCUPANCY OR USE:	LIVE LOAD:	CONCENTRATED LOAD:
FLOORS (UNLESS NOTED OTHERWISE)	250 p.s.f.	or HS20-44

   SNOW LOADS:

ROOF DESIGN SNOW LOAD, Pf (NON-REDUCIBLE)	40 p.s.f.
EXPOSURE FACTOR, C_e	1.0
IMPORTANCE FACTOR, I_s	1.1
THERMAL FACTOR, C_t	1.0
GROUND SNOW LOAD, P_g	30 p.s.f.

   SEISMIC LOADS:

IMPORTANCE FACTOR, I_E	1.25
MAPPED SPECTRAL RESPONSE ACCELERATIONS:	
S_S	0.185
S_1	0.059
SITE CLASS	E
SPECTRAL RESPONSE COEFFICIENTS:	
S_{DS}	0.197
S_{D1}	0.094
SEISMIC DESIGN CATEGORY	C

   BASIC SEISMIC-FORCE-RESISTING SYSTEMS: LIGHT FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS

DESIGN BASE SHEAR:	0.60 KIP
RESPONSE MODIFICATION FACTOR, R:	6.5

   ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

   WIND LOADS:

BASIC WIND SPEED (3-SECOND GUST):	100 m.p.h.
WIND EXPOSURE	C
IMPORTANCE FACTOR, Iw	1.15
INTERNAL PRESSURE COEFFICIENT, GC_{pi}	±0.18

   FLOOD LOADS:

   NOT IN FLOOD HAZARD ZONE

2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE LOCATION OF MECHANICAL OPENINGS, FLOOR DRAINS, INSERTS, DEPRESSIONS, BURIED CABLES AND UTILITIES, ETC. WITH ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.

3. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS, NOTIFY ENGINEER OF DISCREPANCIES. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.

SOILS AND FOUNDATIONS

1. FOUNDATION DESIGN IS IN ACCORDANCE WITH THE SOIL REPORT BY ENTECH ENGINEERING, INC, NUMBER 160452, DATED MARCH 3, 2016.

2. DESIGN OF FOOTINGS AND WALLS IS BASED ON FOLLOWING CRITERIA:

MAXIMUM ALLOWABLE SOIL BEARING PRESSURE	2,400 p.s.f.
EQUIVALENT FLUID PRESSURE FOR RETAINING (ON SITE)	
ACTIVE	45 p.c.f.
AT REST	70 p.c.f.

3. SOIL BENEATH FOOTING SHALL BE SOLID UNDISTURBED NATIVE MATERIAL FREE OF WATER, FROST OR FOREIGN DEBRIS; OR GRANNULAR NONEXPANSIVE STRUCTURAL FILL COMPACTED IN ACCORDANCE WITH THE SOILS REPORT AND SPECIFICATIONS WITH MINIMUM DENSITY AS FOLLOWS:

   FOOTING: 98% OF STANDARD PROCTOR, ASTM D698 OR 95% OF MODIFIED PROCTOR DENSITY ASTM D1557.

4. SOIL BENEATH SLABS-ON-GRADE SHALL BE SOLID UNDISTURBED NATIVE MATERIAL FREE OF WATER, FROST OR FOREIGN DEBRIS; OR GRANNULAR, NON-EXPANSIVE STRUCTURAL FILL COMPACTED IN ACCORDANCE WITH THE SOILS REPORT AND SPECIFICATIONS WITH MINIMUM DENSITY AS FOLLOWS:

   SLABS-ON-GRADE: 95% OF MODIFIED PROCTOR, ASTM D698.

5. A REPRESENTATIVE OF THE SOILS ENGINEER SHALL INSPECT THE OPEN EXCAVATION TO DETERMINE THAT THE SOIL TYPE AND CONDITIONS ARE CONSISTENT WITH DESIGN CRITERIA OF THE SOILS REPORT. IF THE SOIL PROPERTIES ARE FOUND TO BE DIFFERENT FROM THIS CRITERIA, THEN THE ENGINEER SHALL BE PROMPTLY NOTIFIED SO THAT THE FOUNDATION DESIGN MAY BE REVIEWED.

CONCRETE:

1. ALL CONCRETE DESIGN, MATERIALS AND CONSTRUCTION SHALL CONFORM TO ACI STANDARD 318-08, THE INTERNATIONAL BUILDING CODE, 2009 EDITION, THE CRSI MANUAL OF STANDARD PRACTICE (CURRENT EDITION) AND THE PROJECT SPECIFICATIONS.

2. MATERIAL SPECIFICATIONS:

REINFORCING BARS	ASTM A615, GR. 60
WELDED WIRE FABRIC	ASTM A185
REINFORCING BARS (WELDED)	ASTM A706, GR. 60

3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS AS FOLLOWS:

   A. GENERAL STRUCTURAL CONCRETE

FOOTING & STEM WALLS	4000 p.s.i.	CEMENT TYPE I/II
SLABS-ON-GRADE	4000 p.s.i.	CEMENT TYPE I/II
(WITH 1.5 lbs OF FIBERMESH PER CUBIC YARD)		

4. REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH THE ACI DETAILING MANUAL, LATEST EDITION. FORMWORK SHALL BE DESIGNED, ERECTED AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS.

5. REINFORCEMENT SHALL BE PLACED SO THAT THE FOLLOWING MINIMUM CONCRETE PROTECTION IS PROVIDED, UNLESS NOTED OTHERWISE.

CONCRETE SURFACES POURED AGAINST GROUND	3" CLEAR
FORMED SURFACES EXPOSED TO GROUND OR WEATHER	
BARS #6 AND LARGER	2" CLEAR
BARS #5 AND SMALLER	1-1/2" CLEAR
SLABS-ON-GRADE	AT CENTERS

6. REINFORCEMENT SHALL BE SECURELY TIED AND SHALL BE SUPPORTED WITH METAL CHAIRS OR HUNG FROM FORMS.

7. CONTINUOUS HORIZONTAL BARS AND CORNER BARS IN FOOTINGS, STEM WALLS AND SLABS SHALL BE LAPPED AS FOLLOWS AT SPLICES. SPLICE LOCATIONS SHALL BE STAGGERED WHERE POSSIBLE.

CONCRETE COMPRESSIVE STRENGTH	No. 6 BARS & SMALLER	No. 7 BARS & LARGER
4000 p.s.i	38 d_b	48 d_b

   (WHERE d_b = BAR DIAMETERS)

8. ADDITIONAL (2) #6 BARS (ONE EACH FACE) WITH A 2'-6" PROJECTION SHALL BE PLACED DIAGONALLY ACROSS THE CORNERS OF ALL OPENINGS AND VERTICAL STEPS IN WALLS.

9. TOP SLAB SHALL BE PLACED AND CURED PRIOR TO BACKFILLING WALLS. PLACE BACKFILL EQUALLY ON ALL SIDES OF STRUCTURE UNTIL REQUIRED LEVELS ARE REACHED.

10. KEYWAYS AND WATERSTOP SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS IN WALLS.

11. ALL JOINTS SHALL BE APPROVED BY THE ENGINEER.

WOOD:

1. ALL LUMBER MATERIALS, FABRICATION AND CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE 2009 EDITION, THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, ALONG WITH ITS SUPPLEMENT OF WOOD DESIGN VALUES, LATEST EDITION AND THE PROJECT SPECIFICATIONS.

2. ALL DIMENSION LUMBER (2" TO 4" THICK) SHALL BE HEM FIR #2 OR BETTER WITH THE FOLLOWING MINIMUM ALLOWABLE STRESSES (NORMAL LOADING CONDITIONS AND SINGLE MEMBER USES):

EXTREME FIBER IN BENDING Fb	850 psi
HORIZONTAL SHEAR Fv	75 psi
COMPRESSION PERPENDICULAR TO GRAIN Fc⊥	405 psi
COMPRESSION PARALLEL TO GRAIN Fc	1,300 psi
MODULUS OF ELASTICITY E	1,300,000 psi

3. ALL PLYWOOD SHEATHING SHALL BEAR THE STAMP OF THE AMERICAN PLYWOOD ASSOCIATION (APA). PLYWOOD SHALL HAVE THE FOLLOWING SPAN RATINGS:

	SPAN RATING
ROOFS	
5/8" PLYWOOD (STRUCTURAL I)	40/20
WALLS	
1/2" PLYWOOD (STRUCTURAL I)	32/16

4. MISCELLANEOUS FRAMING CLIPS, ANCHORS AND HANGERS SHALL BE PROVIDED AS NECESSARY TO ERECT A RIGID STRUCTURAL FRAMEWORK. ALL CONNECTORS REFER TO SIMPSON STRONG TIE COMPANY. EQUAL CONNECTORS MAY BE UTILIZED PROVIDED THEY HAVE EQUIVALENT CAPACITIES.

5. ALL BUILT-UP MEMBERS OF TWO PIECES SHALL BE NAILED TOGETHER WITH A MINIMUM OF FOUR (4) 10d COMMON NAILS PER FOOT. ALL BUILT-UP MEMBERS OF MORE THAN TWO PIECES SHALL BE BOLTED TOGETHER WITH 1/2" DIAMETER AT 24" O.C. (COUNTER SINK AS REQUIRED) WITH A MINIMUM OF THREE (3) BOLTS PER BEAM.

6. ROOF PLYWOOD SHEATHING SHALL BE NAILED AT ALL PLYWOOD PANEL EDGES WITH 10d COMMON NAILS AT 4" O.C. ALL PLYWOOD PANEL EDGES SHALL BE BLOCKED. NAIL TO INTERMEDIATE SUPPORTS WITH 10d COMMON NAILS AT 8" O.C.

7. WALL PLYWOOD SHEATHING SHALL BE NAILED AT ALL PLYWOOD PANEL EDGES WITH 10d COMMON NAILS AT 4" O.C. ALL PLYWOOD PANEL EDGES SHALL BE BLOCKED. NAIL TO INTERMEDIATE SUPPORTS WITH 10d COMMON NAILS AT 8" O.C.

8. ALL NAILING SHALL CONFORM TO CHAPTER 23 OF THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE.

STRUCTURAL STEEL:

1. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36.

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LIFT STATION DRY PIT ACCESS BUILDING
STRUCTURAL GENERAL NOTES
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

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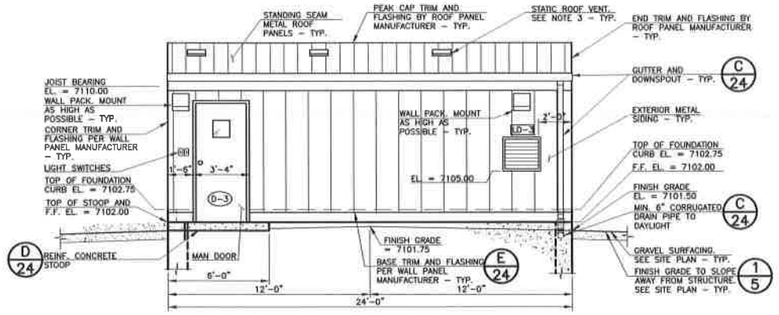
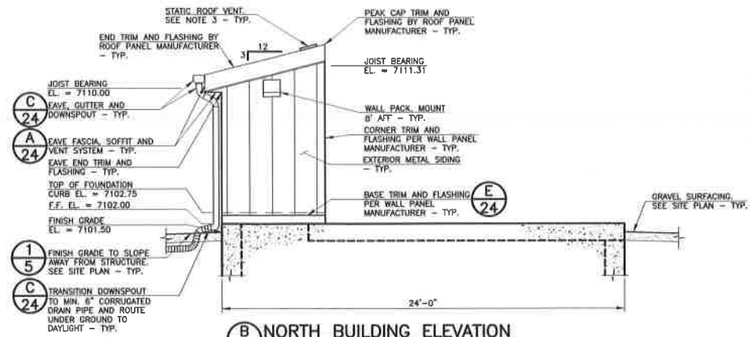


A 23 EAST BUILDING ELEVATION
SCALE: 1/4" = 1'-0"

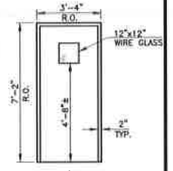


B 23 NORTH BUILDING ELEVATION
SCALE: 1/4" = 1'-0"

DOOR SCHEDULE									
TAG	WIDTH	HEIGHT	TYPE	HAND	HARDWARE SET	HEAD	JAMB	SILL	COMMENT
D-3	3'-0"	7'-0"	A	LHR	8	1	2	3	LOCKSET SHALL BE ANSI F13 ENTRANCE FUNCTION.

NOTES:

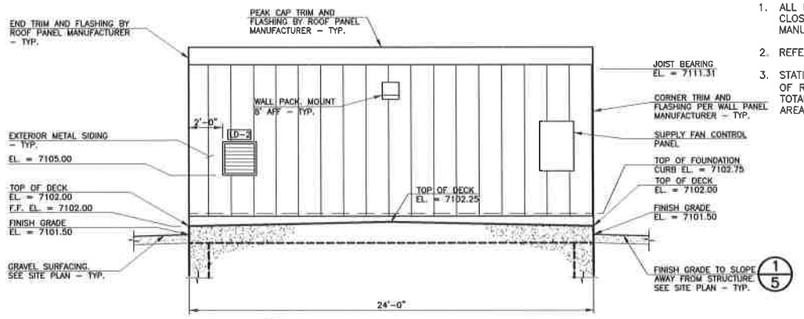
1. ROUGH OPENING (R.O.) DIMENSIONS SHOWN ARE NOMINAL. VERIFY EXACT DIMENSIONS REQUIRED FOR EACH DOOR WITH DOOR AND FRAME MANUFACTURER.
2. REFER TO PROJECT MANUAL FOR HARDWARE SPECIFICATIONS.
3. INTERIOR FINISHES SHALL BE:
   WALLS: PLYWOOD WALL BOARD, TEXTURE NOT REQUIRED, AND PAINTED OFF-WHITE
   CEILING: CEMENT FIBER BOARD OVER GYPSUM WALL BOARD, TEXTURE NOT REQUIRED, AND PAINTED OFF-WHITE



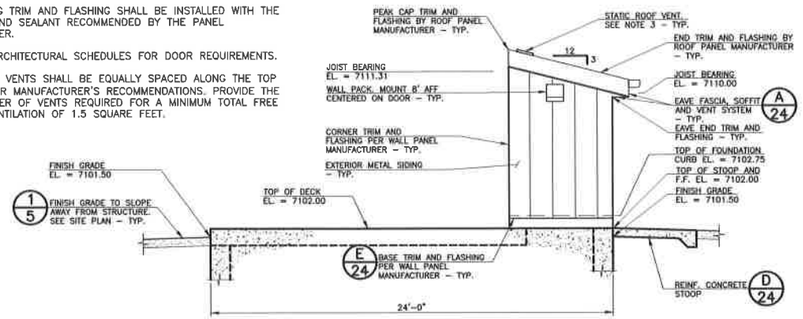
A

ARCHITECTURAL ELEVATION NOTES:

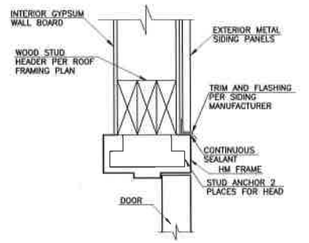
1. ALL BUILDING TRIM AND FLASHING SHALL BE INSTALLED WITH THE CLOSURES AND SEALANT RECOMMENDED BY THE PANEL MANUFACTURER.
2. REFER TO ARCHITECTURAL SCHEDULES FOR DOOR REQUIREMENTS.
3. STATIC ROOF VENTS SHALL BE EQUALLY SPACED ALONG THE TOP OF ROOF PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE THE TOTAL NUMBER OF VENTS REQUIRED FOR A MINIMUM TOTAL FREE AREA OF VENTILATION OF 1.5 SQUARE FEET.



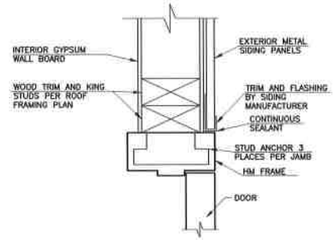
C 23 WEST BUILDING ELEVATION
SCALE: 1/4" = 1'-0"



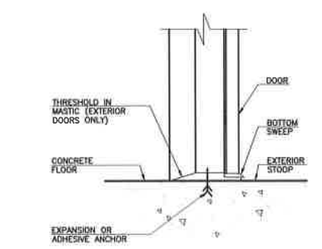
D 23 SOUTH BUILDING ELEVATION
SCALE: 1/4" = 1'-0"



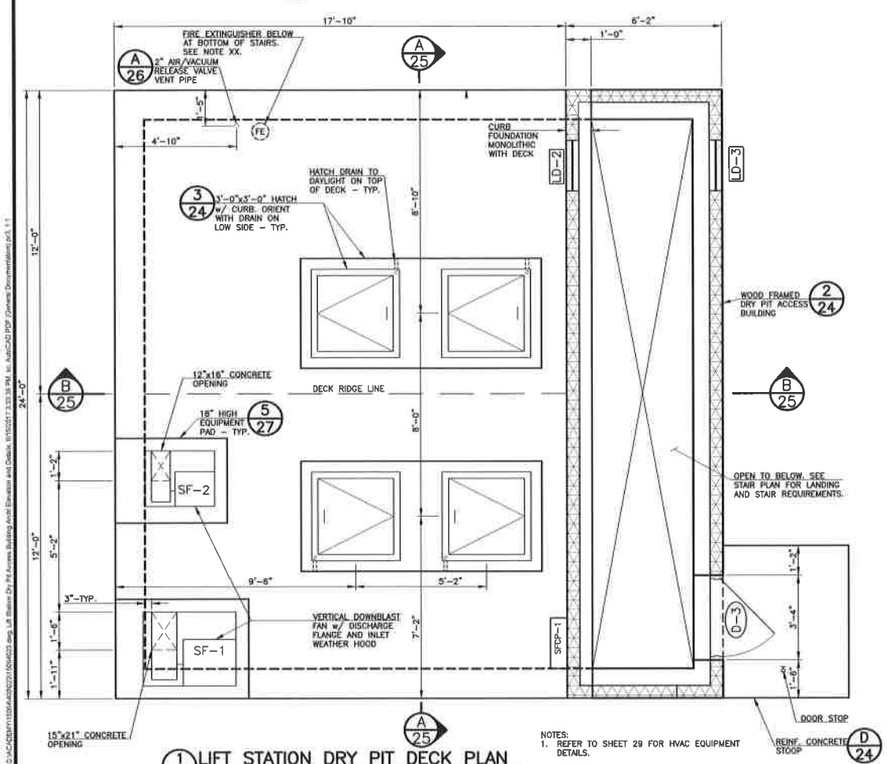
4 23 HEAD
SCALE: NONE



5 23 JAMB
SCALE: NONE

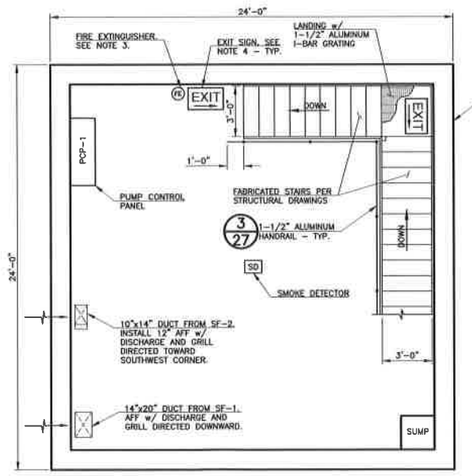


6 23 SILL
SCALE: NONE



1 23 LIFT STATION DRY PIT DECK PLAN
SCALE: 3/8" = 1'-0"

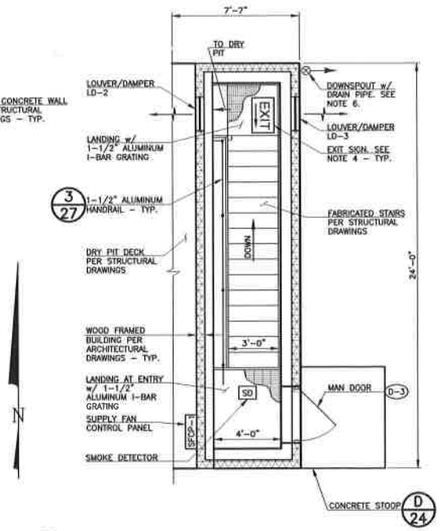
NOTES:
1. REFER TO SHEET 29 FOR HVAC EQUIPMENT DETAILS.



2 23 LIFT STATION DRY PIT PLAN
SCALE: 1/4" = 1'-0"

NOTES:

1. SEE ELECTRICAL DRAWINGS FOR DETAILS ON LIGHTING, POWER AND HVAC EQUIPMENT.
2. SEE ARCHITECTURAL SCHEDULES AND DETAILS FOR DOOR AND FINISH REQUIREMENTS.
3. REFER TO PROJECT MANUAL FOR HARDWARE SPECIFICATIONS.
4. PROVIDE EXIT SIGN OVER DOORS AS INDICATED:
   - MINIMUM SIZE = 10"x14"
   - VINYL CONSTRUCTION
   - ADHESIVE MOUNTING TO WALL
   - RED LETTERS ON WHITE BACKGROUND
   - MINIMUM LETTER SIZE = 6" HIGH x 2" WIDE (EXCEPT "I")
   - ACCUFORM SIGNS MODEL MADC534VS OR EQUAL
   - PROVIDE 12"x16"x1/16" ALUMINUM PLATE FOR MOUNTING IF WALL IS NOT SUITABLE TO PROVIDE CODE COMPLIANT SIGNAGE.
5. THERE WILL BE NO WINDOWS, OTHER THAN IN DOORS, IN THE STORAGE BUILDING.
6. ALL DOWNSPOUTS SHALL HAVE DRAIN PIPE EXTENDING AT MIN. 2% SLOPE TO EXISTING CELL NO. 3 PER SITE PLAN.



3 23 LIFT STATION DRY PIT ACCESS BUILDING PLAN
SCALE: 1/4" = 1'-0"

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LIFT STATION DRY PIT ACCESS BUILDING ARCHITECTURAL ELEVATIONS AND DETAILS

LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN	SKC
DESIGNED	MAM
CHECKED	RJS
DATE	JUNE 2017
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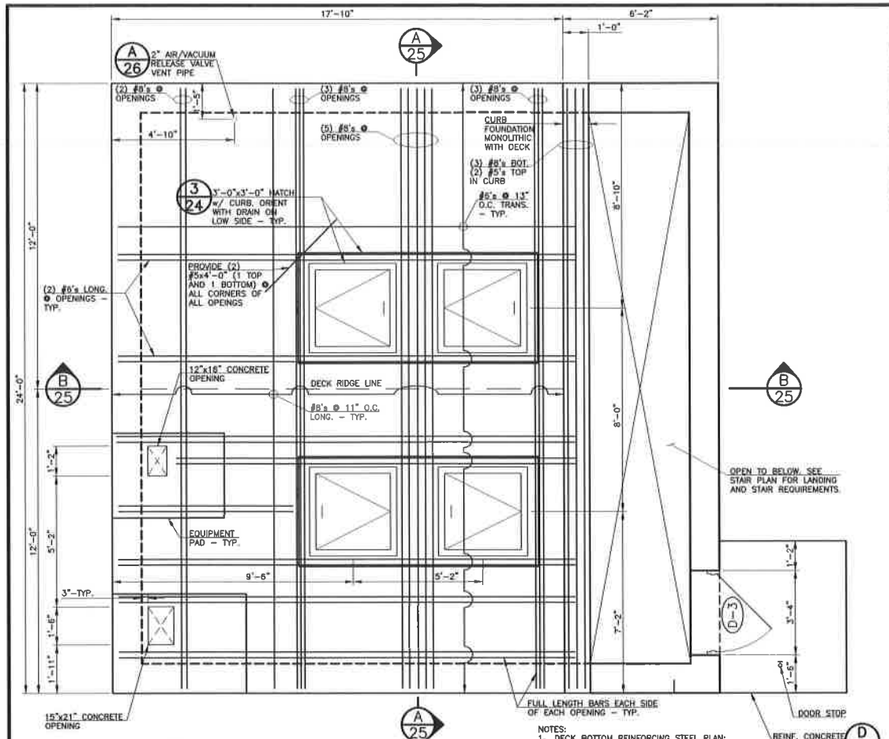
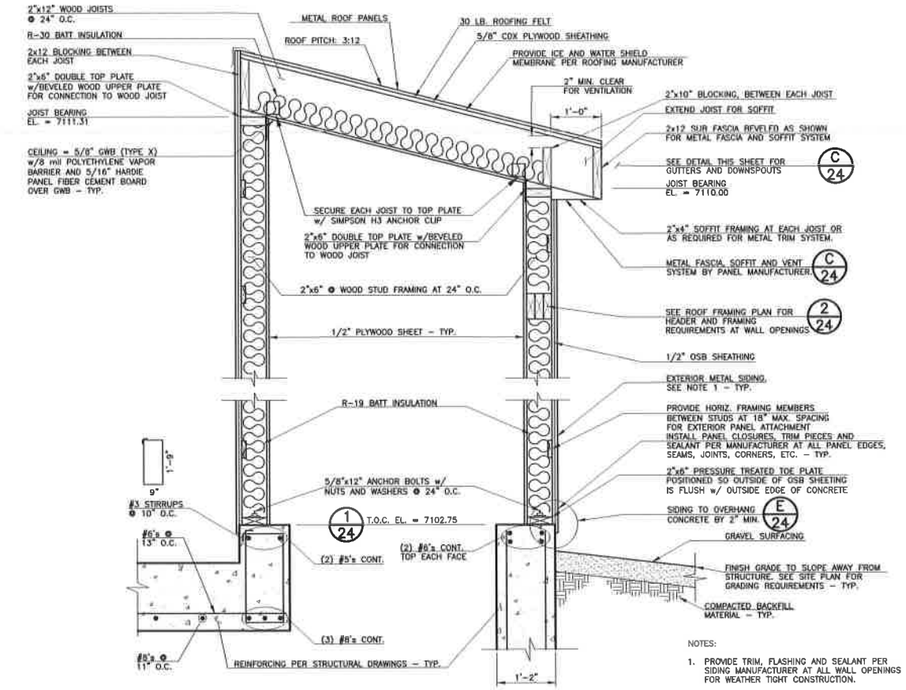
SHEET 23 OF 31



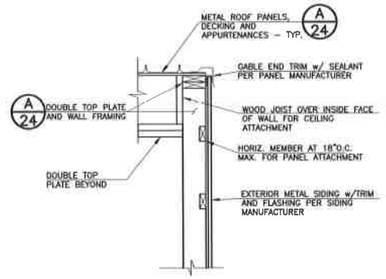
NOTES:
1. DECK BOTTOM REINFORCING STEEL PLAN: #6's NORTH - SOUTH @ BOTTOM #6's EAST - WEST ABOVE #8's

1/24 LIFT STATION DRY PIT DECK PLAN
SCALE: 3/8" = 1'-0"

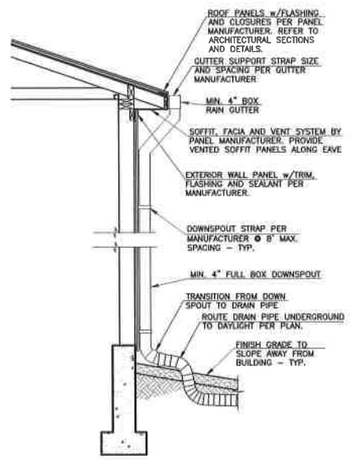


NOTES:
1. PROVIDE TRIM, FLASHING AND SEALANT PER SIDING MANUFACTURER AT ALL WALL OPENINGS FOR WEATHER TIGHT CONSTRUCTION.

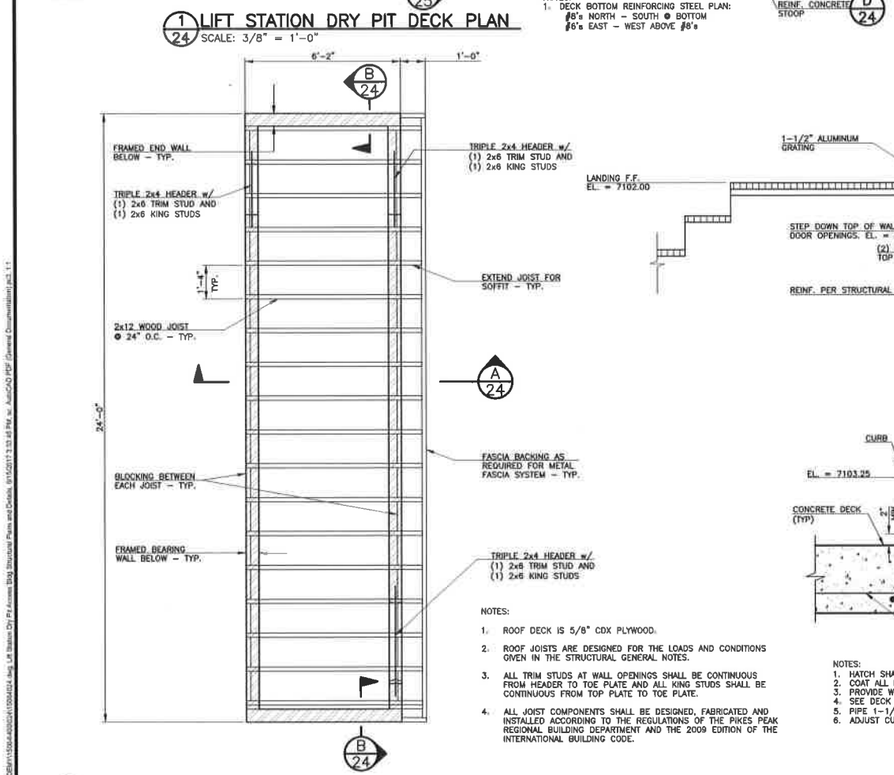
A 24 TYPICAL DRY PIT ACCESS BUILDING WALL SECTION
SCALE: NONE



B 24 END WALL SECTION
SCALE: NONE

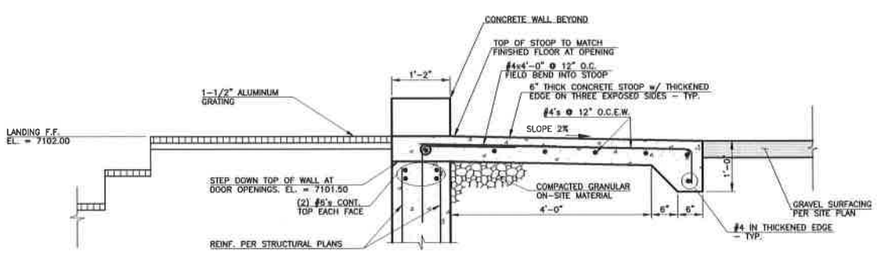


C 24 EAVE, GUTTER AND DOWNSPOUT SECTION
SCALE: 1/2" = 1'-0"

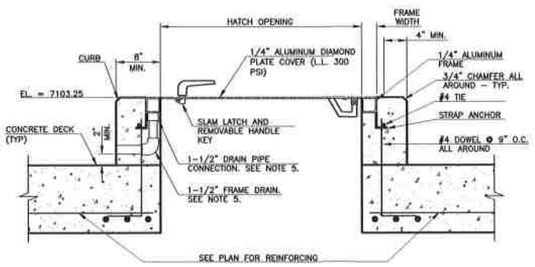


NOTES:
1. ROOF DECK IS 5/8" CDX PLYWOOD.
2. ROOF JOISTS ARE DESIGNED FOR THE LOADS AND CONDITIONS GIVEN IN THE STRUCTURAL GENERAL NOTES.
3. ALL TRIM STUDS AT WALL OPENINGS SHALL BE CONTINUOUS FROM HEADER TO TOE PLATE AND ALL KING STUDS SHALL BE CONTINUOUS FROM TOP PLATE TO TOE PLATE.
4. ALL JOIST COMPONENTS SHALL BE DESIGNED, FABRICATED AND INSTALLED ACCORDING TO THE REGULATIONS OF THE PIKES PEAK REGIONAL BUILDING DEPARTMENT AND THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE.

2/24 LIFT STATION DRY PIT ACCESS BUILDING ROOFING PLAN
SCALE: 3/8" = 1'-0"

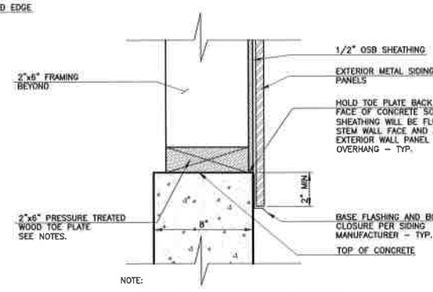


D 24 CONCRETE STOOP SECTION
SCALE: NONE



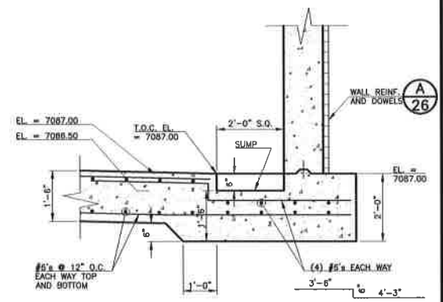
NOTES:
1. HATCH SHALL BE 36"x36" CLEAR OPENING, BILCO OR EQUIVALENT.
2. COAT ALL EMBEDDED ALUMINUM WITH COAL TAR EPOXY.
3. PROVIDE WITH HOLD OPEN ARM AND FALL PROTECTION GRATE.
4. SEE DECK PLAN FOR ORIENTATION.
5. PIPE 1-1/2" DRAIN TO DAYLIGHT.
6. ADJUST CURB DIMENSIONS AS NECESSARY TO ACCOMMODATE EQUIPMENT FURNISHED.

3/24 HATCH DETAIL
SCALE: 1" = 1'-0"



NOTE:
1. ANCHOR BOLTS, NUTS AND WASHERS NOT SHOWN FOR CLARITY.

E 24 SECTION
SCALE: NONE



F 24 SECTION
SCALE: NONE

LIFT STATION DRY PIT ACCESS BUILDING STRUCTURAL PLANS AND DETAILS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
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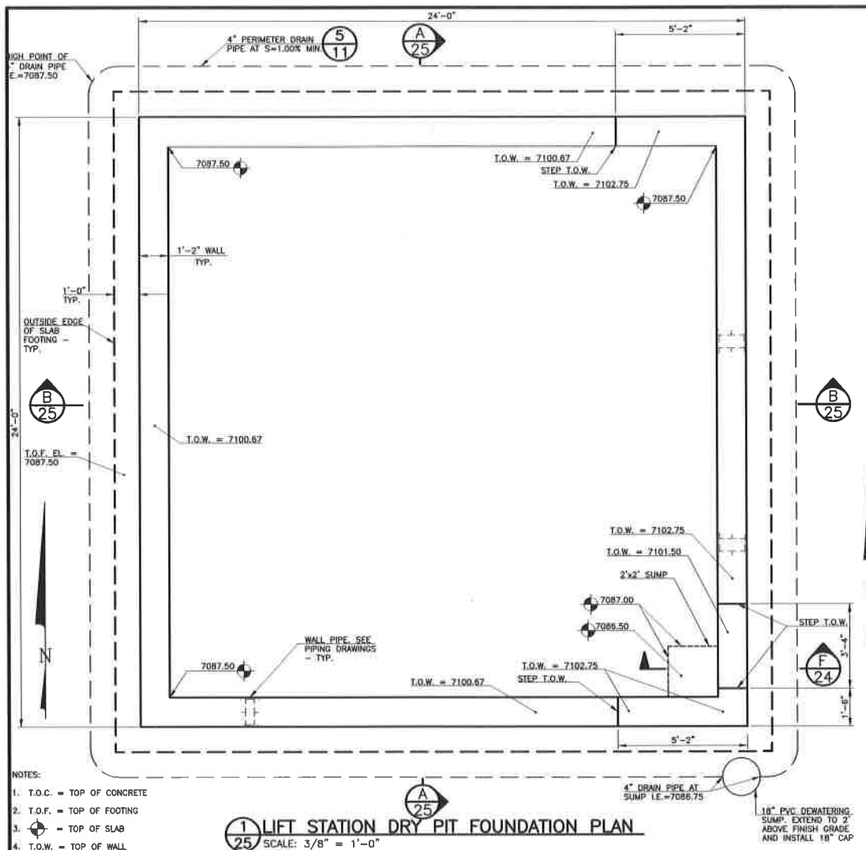
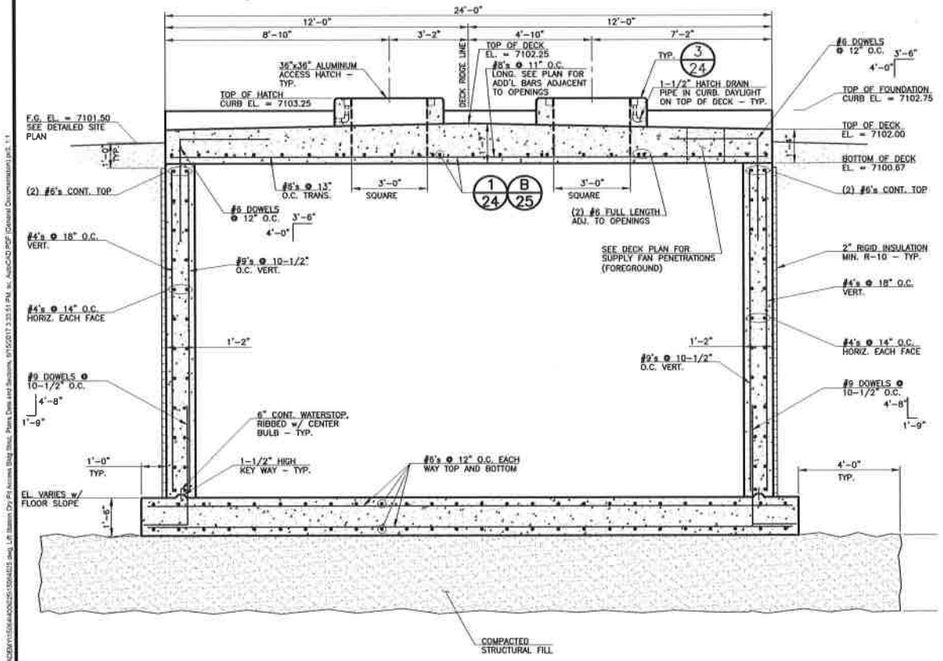
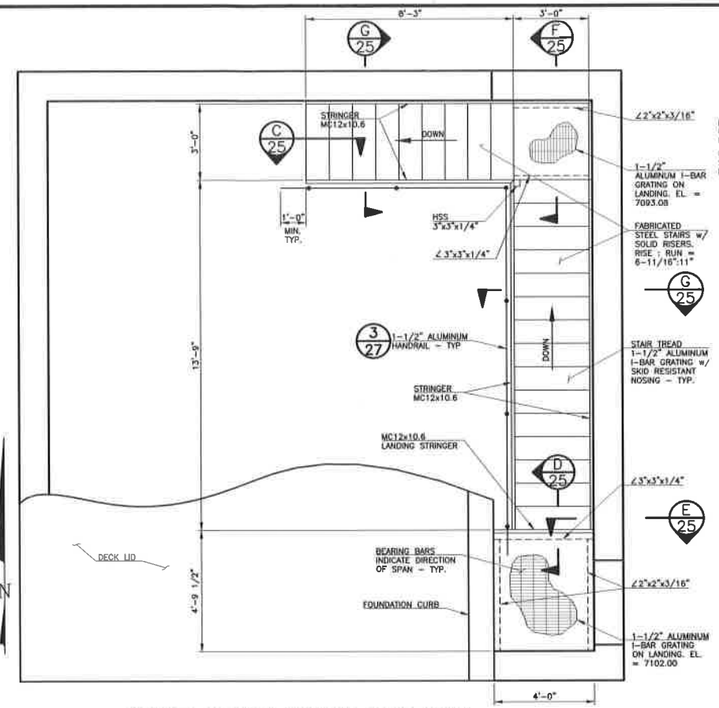


NOTES:
1. T.O.C. = TOP OF CONCRETE
2. T.O.F. = TOP OF FOOTING
3. ⊕ = TOP OF SLAB
4. T.O.W. = TOP OF WALL

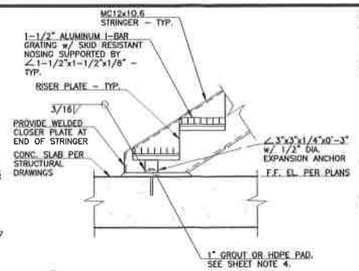
1 25 LIFT STATION DRY PIT FOUNDATION PLAN
SCALE: 3/8" = 1'-0"



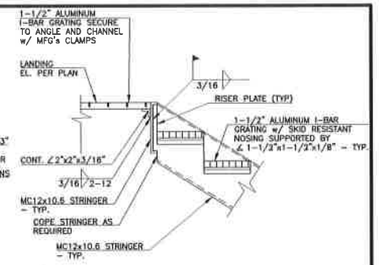
A 25 LIFT STATION DRY PIT SECTION
SCALE: 3/8" = 1'-0"



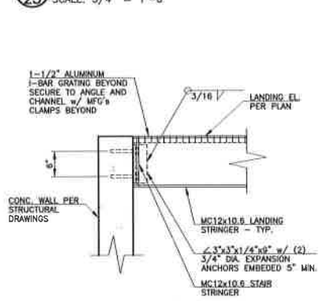
2 25 LIFT STATION DRY PIT STAIR PLAN
SCALE: 3/8" = 1'-0"



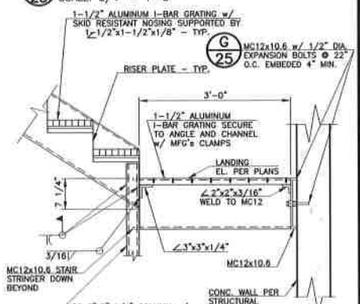
C 25 STAIRWAY TO FLOOR DETAIL
SCALE: 3/4" = 1'-0"



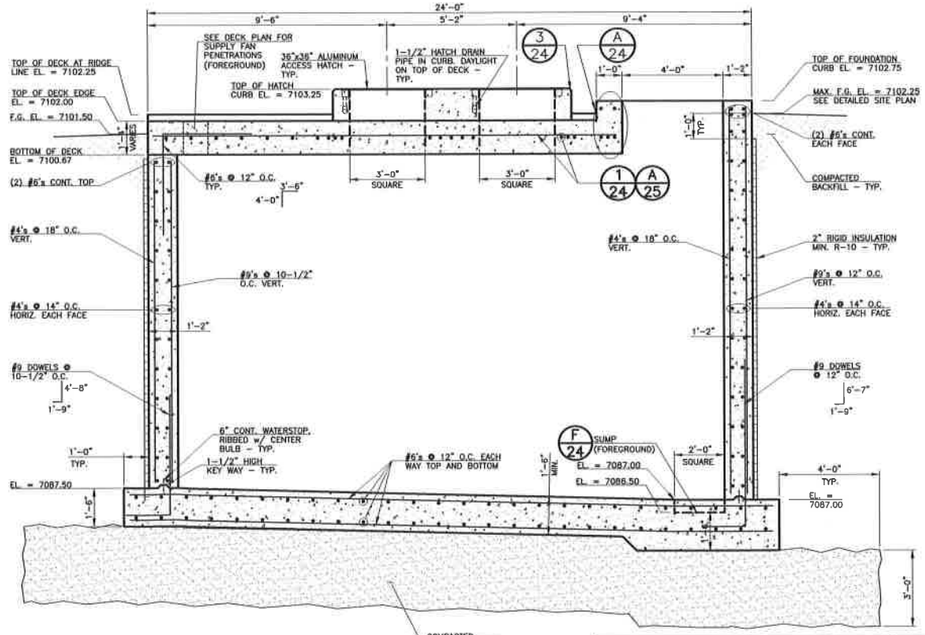
D 25 STAIRWAY TO WALKWAY DETAIL
SCALE: 3/4" = 1'-0"



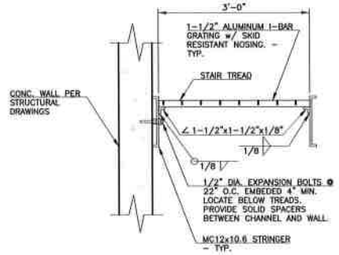
E 25 WALKWAY SUPPORT DETAIL
SCALE: 3/4" = 1'-0"



F 25 LANDING DETAIL
SCALE: 3/4" = 1'-0"



B 25 LIFT STATION DRY PIT SECTION
SCALE: 3/8" = 1'-0"



G 25 STAIR TREAD/STRINGER TO WALL DETAIL
SCALE: 3/4" = 1'-0"

SHEET NOTES:

1. ALL MISCELLANEOUS CHANNELS AND ANGLES SHALL BE HOT DIPPED GALVANIZED UNLESS OTHERWISE NOTED. ALL ANCHORS SHALL BE STAINLESS STEEL.
2. FIELD WELDING SHALL BE HELD TO A MINIMUM. WHERE FIELD WELDING IS ACCOMPLISHED, ALL WELD AREAS SHALL BE PREPARED, WELDED, FINISHED AND COATED ACCORDING TO THE PROJECT SPECIFICATIONS WITH A MINIMUM OF 2 COATS OF ZINC RICH PAINT.
3. REFER TO STAIR PLANS AND ARCHITECTURAL DRAWINGS FOR HANDRAIL REQUIREMENTS. HANDRAIL NOT SHOWN IN SECTIONS FOR CLARITY.
4. ALL BASE PLATES AND ANGLES ANCHORED TO FLOOR SLAB SHALL BE INSTALLED ON A 1" GROUT OR HDPE PAD.

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BASE DWG: G:\
PLOT STYLE FILE: 100C.ctb
FILENAME: G:\ACADDATA\15064\400\025\15064025.dwg

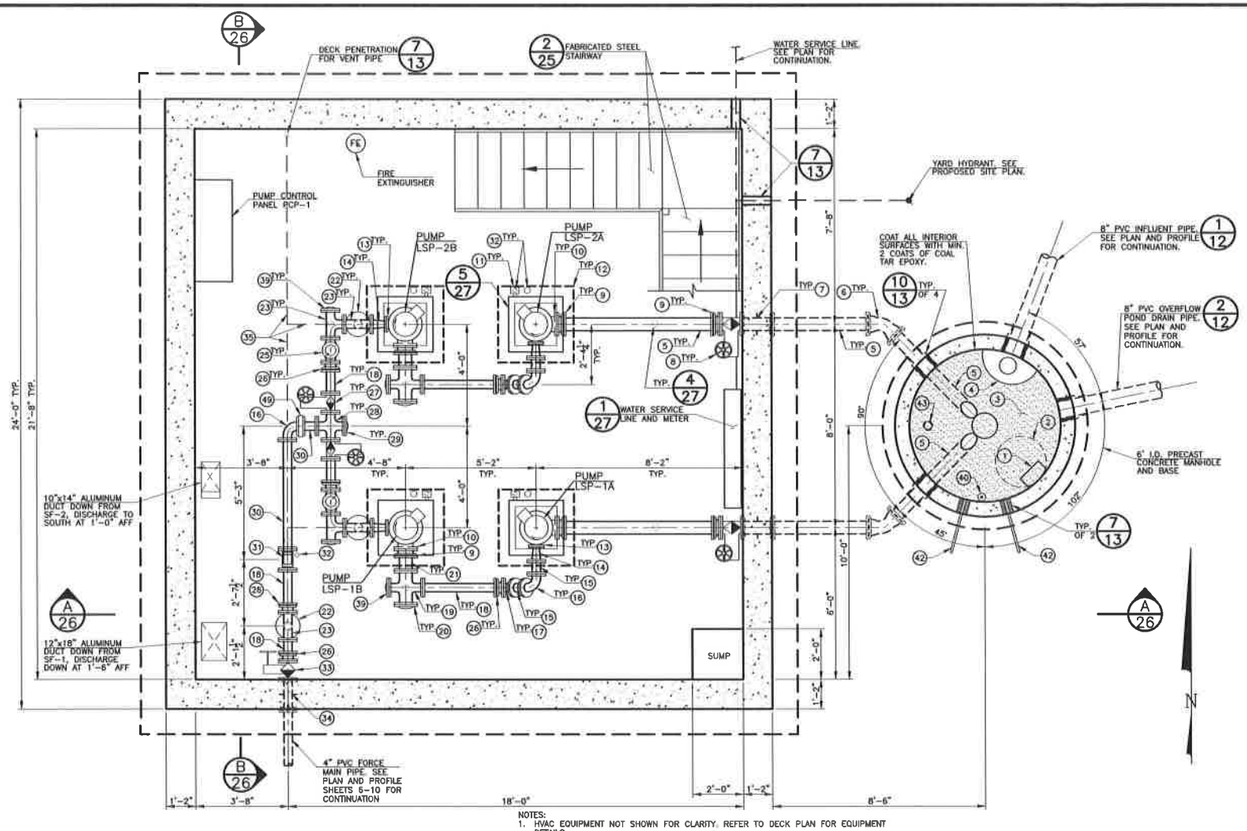
LIFT STATION DRY PIT ACCESS BUILDING STRUCTURAL PLANS, DETAILS AND SECTIONS

LIFT STATION AND FORCE MAIN IMPROVEMENTS

ACADEMY WATER & SANITATION DISTRICT

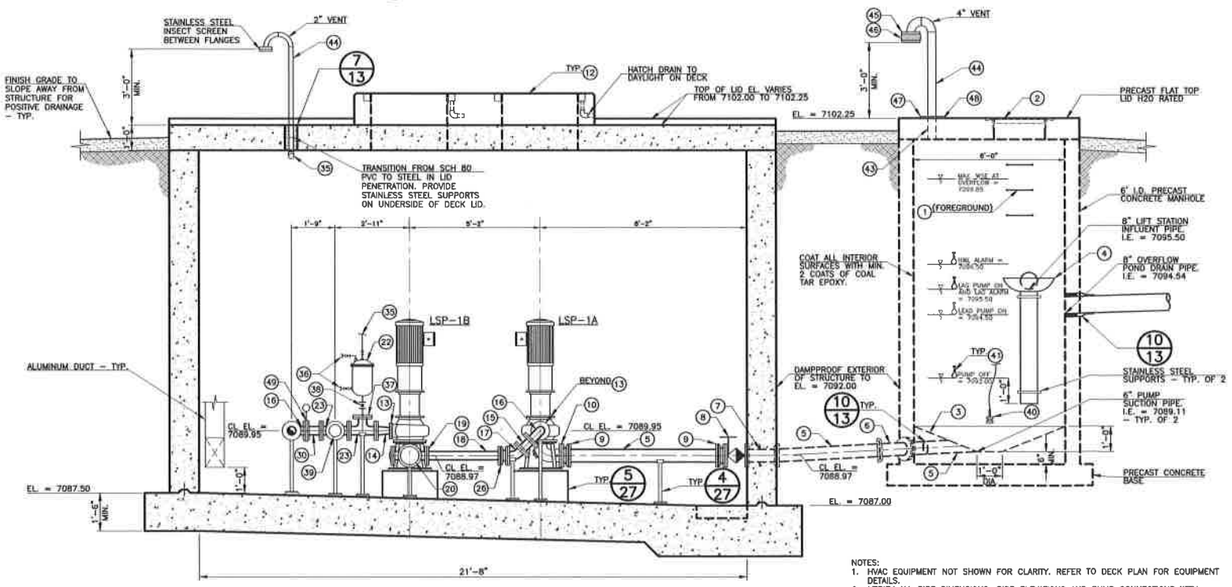
DRAWN	SKC
DESIGNED	MAM
CHECKED	RJS
DATE	JUNE 2017
PROJECT NO.	15064.400
GMS FILE NO.	2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903



NOTES:
1. HVAC EQUIPMENT NOT SHOWN FOR CLARITY. REFER TO DECK PLAN FOR EQUIPMENT DETAILS.

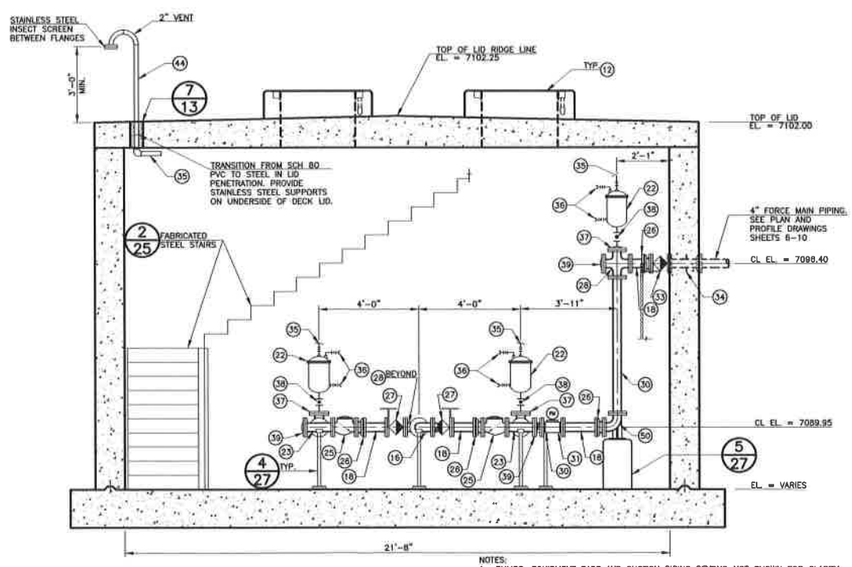
1/26 LIFT STATION DRY PIT PLAN
SCALE: 3/8" = 1'-0"



NOTES:
1. HVAC EQUIPMENT NOT SHOWN FOR CLARITY. REFER TO DECK PLAN FOR EQUIPMENT DETAILS.
2. VERIFY ALL PIPE DIMENSIONS, PIPE ELEVATIONS AND PUMP CONNECTIONS WITH EQUIPMENT FURNISHED.

A/26 LIFT STATION DRY PIT SECTION
SCALE: 3/8" = 1'-0"

1. MANHOLE STEPS @ 12" O.C.
2. 30" DIAMETER LOCKING ALUMINUM RING AND COVER H20 RATED. SET FLUSH WITH TOP OF LID.
3. NON-SHRINK GROUT FILLETS WITH SMOOTH TROWEL FINISH.
4. INTERNAL DROP BOWL, RELINER OR EQUAL.
5. 6" PExPE D.I.P.
6. 6" MJ 45° HORIZONTAL BEND WITH JOINT RESTRAINTS.
7. 6" FLGxMJ WALL PIPE WITH MJ JOINT RESTRAINT.
8. 6" FLG PLUG VALVE WITH HAND WHEEL. INSTALL PLUG SHAFT HORIZONTAL.
9. 6" RESTRAINED FLANGE COUPLING ADAPTER.
10. 6" FLG PUMP SUCTION CONNECTION, VERIFY WITH EQUIPMENT FURNISHED.
11. EMERGENCY STOP PUSH BUTTON, LOCKABLE IN OFF POSITION. MOUNT ON VERTICAL STAINLESS STEEL UNISTRUT.
12. 36"x36" ALUMINUM HATCH WITH SAFETY GRATE CENTERED OVER PUMPS.
13. 3" FLG PUMP DISCHARGE CONNECTION, VERIFY WITH EQUIPMENT FURNISHED.
14. 3"x4" FLG REDUCER
15. 4" FLGxFLG D.I.P.
16. 4" FLG 90° BEND
17. 4" FLG 45° BEND
18. 4" FLGxPE D.I.P.
19. 4"x6" FLG CROSS
20. 6" BLIND FLANGE
21. 6" FLGxPE D.I.P.
22. COMBINATION AIR/VACUUM RELEASE VALVE. ROUTE VENT PIPING TO CEILING AS SHOWN.
23. 4"x4" FLG TEE
24. 4" FLG 90° BEND
25. 4" FLG CHECK VALVE
26. 4" RESTRAINED FLANGE COUPLING ADAPTER
27. 4" FLG PLUG VALVE WITH HAND WHEEL. INSTALL PLUG SHAFT HORIZONTAL.
28. 4"x4" FLG CROSS
29. 4" BLIND FLANGE
30. 4" FLGxFLG D.I.P.
31. 4" FLG ELECTROMAGNETIC FLOW METER.
32. CONDUIT UP FROM SLAB.
33. 4" FLG PLUG VALVE WITH CHAINWHEEL. INSTALL PLUG SHAFT HORIZONTAL.
34. 4" FLGxMJ WALL PIPE WITH MJ JOINT RESTRAINT.
35. 2" SCH 80 PVC VENT PIPE ALONG CEILING FROM AIR/VACUUM RELEASE VALVES.
36. BACK FLUSH CONNECTION.
37. 4" BLIND FLANGE WITH 2" TAP.
38. 2" STAINLESS STEEL THREADED NIPPLES AND STAINLESS STEEL BALL VALVE
39. 4" BLIND FLANGE
40. LEVEL TRANSDUCER INSTALLED IN PVC PIPE PER MANUFACTURER'S RECOMMENDATIONS
41. BACKUP FLOAT SYSTEM
42. CONDUIT AND CONDUCTORS FOR LEVEL TRANSDUCER AND BACKUP FLOATS TO PUMP CONTROL PANEL
43. 4" VENT PENETRATION
44. SCH 40 WELDED STEEL VENT PIPE, SIZE AS INDICATED. PAINT PER SPECIFICATIONS.
45. PROVIDE 9" O.D. FLANGE ON END OF 90° BEND COMPATIBLE WITH CONNECTION OF ODOR CONTROL DEVICE.
46. 4" FLANGED ODOR CONTROL DEVICE, CALGON SWEETVENT CARBON CANISTER FILTER OR EQUAL.
47. 11" O.D. FLANGE WITH STAINLESS STEEL ANCHORS OF SIZE AND NUMBER TO MATCH 6" FLANGE TEMPLATE.
48. FLANGE GASKET AND SEALANT TO SEAL WATERTIGHT.
49. WAFER STYLE PRESSURE SENSOR WITH GUAGE.
50. 4" FLANGE 90° BASE BEND.



NOTES:
1. PUMPS, EQUIPMENT PADS AND SUCTION PIPING BEYOND NOT SHOWN FOR CLARITY.
2. HVAC EQUIPMENT NOT SHOWN FOR CLARITY. REFER TO DECK PLAN FOR EQUIPMENT DETAILS.

B/26 LIFT STATION DRY PIT SECTION
SCALE: 3/8" = 1'-0"

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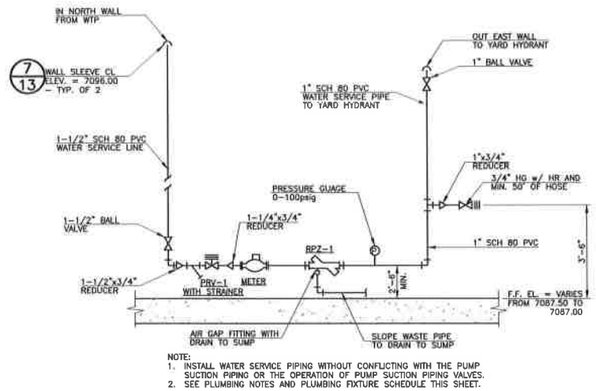
LIFT STATION PIPING PLAN AND SECTIONS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

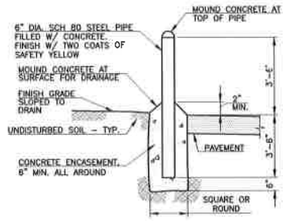
DRAWN	SKC
DESIGNED	MAM
CHECKED	RJS
DATE	JUNE 2017
PROJECT NO.	15064.400
GMS FILE NO.	2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903



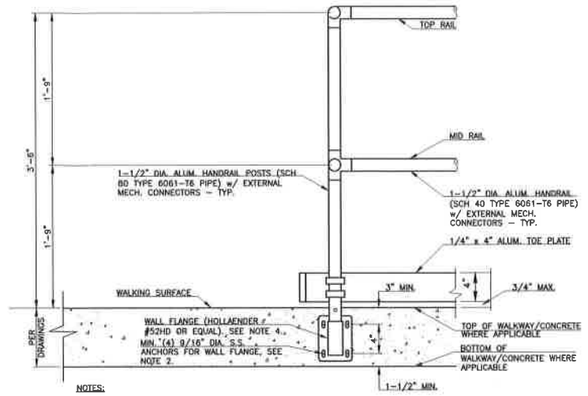
NOTE:
1. INSTALL WATER SERVICE PIPING WITHOUT CONFLICTING WITH THE PUMP SUCTION PIPING OR THE OPERATION OF PUMP SUCTION PIPING VALVES.
2. SEE PLUMBING NOTES AND PLUMBING FIXTURE SCHEDULE THIS SHEET.

1/27 WATER SERVICE ENTRANCE SCHEMATIC
SCALE: NONE



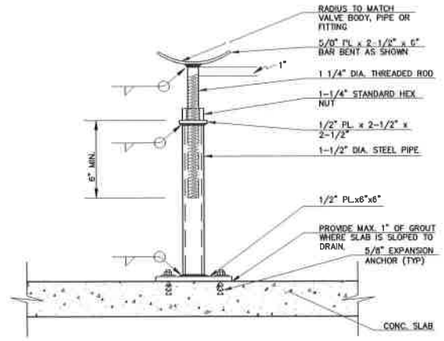
NOTE:
1. FOR BOLLARDS IN PAVEMENT, END CONCRETE ENCASEMENT AT PAVEMENT SURFACE AS SHOWN WITH TACK COAT AT ASPHALT AND 1/2" EXPANSION MATERIAL AND SEALANT AT CONCRETE. FOR CONCRETE PAVEMENTS OR APRONS TOOL JOINTS IN SURFACE CONCRETE TO BOLLARD ENCASEMENT AS SHOWN ON JOINTING PLANS.
2. MAXIMUM BOLLARD SPACING IS 6'–0" CENTER TO CENTER.

2/27 FIXED BOLLARD DETAIL
SCALE: NONE



NOTES:
1. MAXIMUM SPACING BETWEEN HANDRAIL POSTS IS 6'–0".
2. SIDE MOUNT HANDRAIL TO CONCRETE WHERE INDICATED WITH STAINLESS STEEL ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. USE 9/16" DIAMETER THREADED ROD AND HILTI HY150 ADHESIVE ANCHOR SYSTEM WITH MINIMUM EMBEDMENT OF 4". GIVEN EDGE DISTANCES ARE CRITICAL.
3. WHERE BASE MOUNTING PLATES ARE USED TO INSTALL POSTS ON TOP OF WALLS OR MEMBERS, PLATES SHALL BE CENTERED ON THE WALL OR MEMBERS UNLESS OTHERWISE DIRECTED. HANDRAIL POST BASE BY HOLLAENDER, OR EQUAL, WITH MINIMUM FOUR 1/2" DIAMETER STAINLESS STEEL ANCHORS IN ACCORDANCE WITH NOTE NO. 2.
4. PROVIDE STIFFENER INSERT AT BASE FLANGES AT TERMINAL POST.

3/27 TYPICAL HANDRAIL DETAIL
SCALE: NONE



4/27 PIPE SUPPORT DETAIL
SCALE: NONE

NOTES:
1. HEIGHT AS REQUIRED BY EQUIPMENT FURNISHED, 4" MINIMUM UNLESS OTHERWISE NOTED ON THE DRAWINGS OR REQUIRED BY EQUIPMENT FURNISHED.
2. LENGTH AND WIDTH AS REQUIRED BY EQUIPMENT FURNISHED, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. EQUIPMENT FURNISHED WITH BEARING AND/OR VIBRATION PADS SHALL HAVE THEM INSTALLED IN LIEU OF THE GROUT PAD ACCORDING TO THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE (2) MATS OF REINFORCEMENT STEEL WHEN PAD EXCEEDS 10" HIGH.
5. UNLESS NOTED OTHERWISE, TOP OF PAD SHALL BE LEVEL REGARDLESS OF SLOPE OF FLOOR SLAB.

5/27 EQUIPMENT PAD DETAIL
SCALE: NONE

PROVIDE WHERE SHOWN ON DRAWINGS AND AS DIRECTED BY THE ENGINEER AND EL PASO COUNTY. MAINTAIN AS DIRECTED BY OWNER AND ENGINEER.

6/27 SEDIMENT FENCE DETAIL
SCALE: NONE

6/27 RIPRAP DETAIL
SCALE: 1/2" = 1'–0"

PLUMBING NOTES:
1. COORDINATE INSTALLATION OF PLUMBING SYSTEMS WITH OTHER TRADES. OFFSET PIPING AS NECESSARY TO AVOID CONFLICTS WITH OTHER WORK.
2. RESOLVE ALL CONFLICTS WITH THE ENGINEER BEFORE ANY EQUIPMENT IS ORDERED, MATERIALS FABRICATED OR SYSTEMS INSTALLED.
3. WATER SERVICE PIPING SHALL BE SCH80 PVC MATERIAL.
4. WASTE PIPE ABOVE GRADE SHALL BE SCHEDULE 40 PVC. SLOPE ALL WASTE PIPING AT 1/4" PER FOOT MINIMUM UNLESS OTHERWISE NOTED.
5. ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH 2009 IPC, 2009 IBC, 2009 IFGC, 2009 IECC, 2014 NEC, AND 2011 PPRBD COMMERCIAL BUILDING CODE.
6. ABBREVIATIONS :
   - AFF – ABOVE FINISHED FLOOR
   - DR – DRAIN
   - GHT – GARDEN HOSE THREAD
   - HG – HOSE GATE
   - HR – HOSE RACK
   - PRV – PRESSURE REDUCING VALVE
   - RPZ – BACKFLOW PREVENTER
7. PROVIDE SUFFICIENT STAINLESS STEEL OR NON–METALLIC PIPE HANGERS OR SUPPORTS FOR PIPING THROUGHOUT DRY PIT.

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	NOTES
HG	HOSE GATE, BRASS, PIPE MOUNTED, VACUUM BREAKER, 3/4" CHT, WATTS SERIES 5G OR EQUAL. 1" SW. PROVIDE WITH HEAVY DUTY HOSE RACK (HR) AND MINIMUM 50 FEET OF 3/4" RUBBER HOSE. POST "NON–POTABLE".	1
HR	HOSE RACK, WALL MOUNT, HEAVY DUTY, STAINLESS STEEL, McMASTER–CARR TYPE B GARDEN HOSE HOLDER MODEL 53325K53 OR EQUAL.	1
METER	SERVICE METER, 1" POSITIVE DISPLACEMENT TYPE, 2 BOLT FLANGED ENDS, LOW LEAD CONSTRUCTION, STANDARD READ REGISTER IN GALLONS. SENSUS SR OR EQUAL.	1
PRV–1	PRESSURE REDUCING VALVE, BUILDING SERVICE, DIRECT ACTING HIGH CAPACITY TYPE. 3/4" SIZE, LEAD FREE CONSTRUCTION, 300 PSI RATED, 3/4" STRAINER. INLET PRESSURE 60 – 120 PSI. DISCHARGE SETTING 75 PSI. WATTS LF223S OR EQUAL.	1
RPZ–1	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER, SERVICE WATER SYSTEM, 1" SIZE, UNION BALL VALVE ON ENDS, 175 PSI WORKING PRESSURE. PROVIDE WITH SHOCK ARRESTOR AND AIRGAP FITTING, DRAIN TO SUMP. WILKINS 975XLU OR EQUAL.	2

NOTES:
1. OR APPROVED EQUIVALENT

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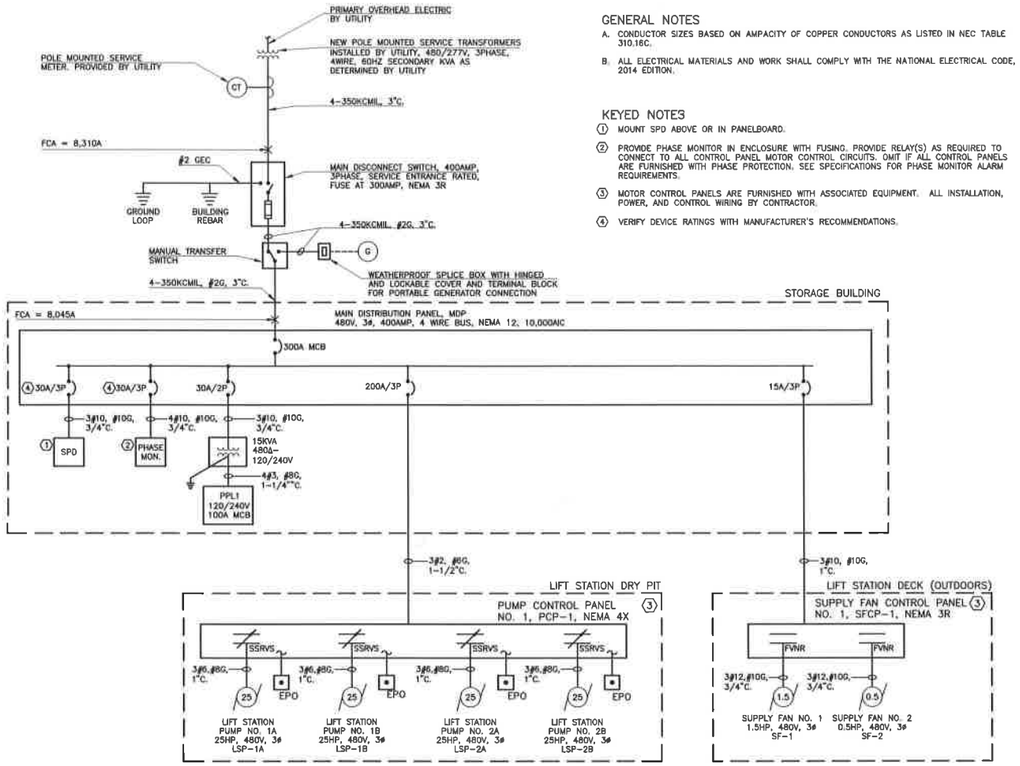
BASE DWG: G:\
PLOT STYLE FILE: 100K.CTB
FILENAME: G:\ACADEMY\15064\600\027\15064027.DWG

DETAILS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
CHECKED EDM
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903



1/28 ONE-LINE DIAGRAM
SCALE: NONE

GENERAL NOTES

A. CONDUCTOR SIZES BASED ON AMPACITY OF COPPER CONDUCTORS AS LISTED IN NEC TABLE 310.16C.

B. ALL ELECTRICAL MATERIALS AND WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, 2014 EDITION.

KEYED NOTES

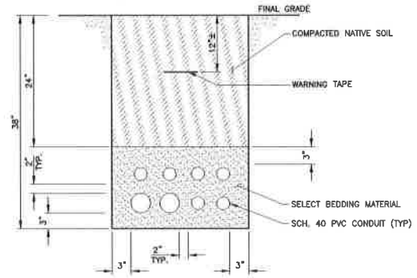
1. MOUNT SPD ABOVE OR IN PANELBOARD.
2. PROVIDE PHASE MONITOR IN ENCLOSURE WITH FUSING. PROVIDE RELAY(S) AS REQUIRED TO CONNECT TO ALL CONTROL PANEL MOTOR CONTROL CIRCUITS. OMIT IF ALL CONTROL PANELS ARE FURNISHED WITH PHASE PROTECTION. SEE SPECIFICATIONS FOR PHASE MONITOR ALARM REQUIREMENTS.
3. MOTOR CONTROL PANELS ARE FURNISHED WITH ASSOCIATED EQUIPMENT. ALL INSTALLATION, POWER, AND CONTROL WIRING BY CONTRACTOR.
4. VERIFY DEVICE RATINGS WITH MANUFACTURER'S RECOMMENDATIONS.

SYMBOL LEGEND

P / o / 3	LIGHTING FIXTURE. UPPER CASE LETTER INDICATES TYPE, LOWER CASE LETTER INDICATES SWITCH LEG, AND NUMBER DENOTES CIRCUIT. REFER TO LUMINAIRE SCHEDULE SHEET 29.
S_a	SINGLE POLE SWITCH, SURFACE MOUNTED, LETTER INDICATES SWITCH LEG.
S_{3a}	3-WAY SWITCH, LETTER INDICATES SWITCH LEG.
3 +48"	DUPLEX RECEPTACLE, SURFACE MOUNT, NUMBER INDICATES 120V PANEL CIRCUIT. MOUNT 18" ABOVE FLOOR UNLESS INDICATED AT ANOTHER HEIGHT. (eg. +48")
WP	WEATHERPROOF, GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE.
GFCI	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE.
	JUNCTION BOX
	MOTOR
	EMERGENCY STOP PUSH BUTTON
	MOTOR STARTER, FVNR - FULL VOLTAGE NON-REVERSING, SSMC OR SSRVS - SOLID STATE REDUCED VOLTAGE MOTOR CONTROLLER, VFD - VARIABLE FREQUENCY DRIVE. NEMA SIZE AS REQUIRED.
	BRANCH CIRCUIT WIRING WITH PANEL AND CIRCUIT NUMBER(S)
—UGE—	UNDERGROUND ELECTRIC
—g—	GROUNDING CONDUCTOR
—c—	CONDUITS FOR CONTROL CABLES CONCEALED, EXPOSED AND BURIED
	GROUND ROD
	GROUNDING
FS	FLOOD SENSOR
MS	MISCELLANEOUS SENSOR
SD	SMOKE DETECTOR

ABBREVIATIONS

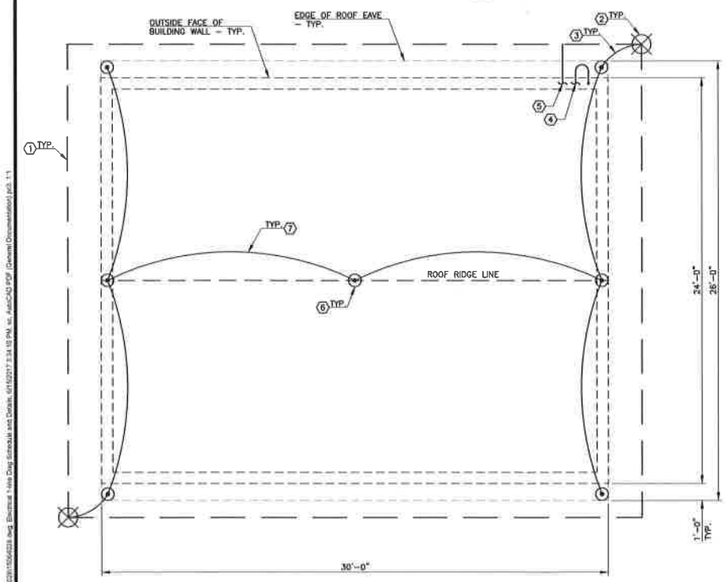
CT	CURRENT TRANSFORMER
PCP-1	LIFT STATION PUMP CONTROL PANEL
SFCP-1	SUPPLY FAN CONTROL PANEL
MCB	MAIN CIRCUIT BREAKER
MDP	480 VOLT MAIN DISTRIBUTION PANEL
PPL1	120/240 VOLT POWER PANEL
SCADA RTU	SUPERVISORY CONTROL AND DATA AQUISITION SYSTEM REMOTE TERMINAL UNIT
SPD	SURGE PROTECTION DEVICE
MAP	MONITORING AND ALARM PANEL



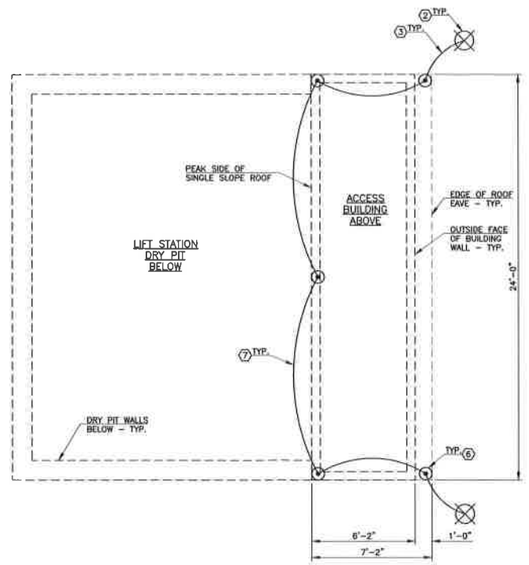
NOTES:

1. CONDUITS SHALL BE TIED TO SPACERS.
2. ALL RISER CONDUIT BENDS AND ABOVE GROUND CONDUIT SHALL BE RIGID METAL CONDUIT. PROVIDE PVC TO METAL COUPLING AT ENDS OF STRAIGHT UNDERGROUND RUNS.
3. WARNING TAPE SHALL BE PROVIDED ABOVE ALL CONDUIT INSTALLATION.

2/28 DUCT BANK DETAIL
SCALE: NOT TO SCALE



STORAGE BUILDING



LIFT STATION DRY PIT AND ACCESS BUILDING

2/28 LIGHTNING PROTECTION PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A. LIGHTNING PROTECTION SYSTEM SHOWN FOR GENERAL INFORMATION ONLY. STRUCTURE TO BE PROVIDED WITH LIGHTNING PROTECTION SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NFPA 780 AND UL STANDARD 96A.

KEYED NOTES

1. GROUND RING: COPPER, #4/0 STRANDED. INSTALL AT BOTTOM OF FOUNDATION FOOTING.
2. LOCATIONS FOR 3/4" X 8'-0" GROUND ROD, COPPER OR COPPER CLAD, AT EACH LIGHTNING PROTECTION DOWN CONDUCTOR LOCATION. FINAL DOWN CONDUCTOR LOCATIONS TO BE DETERMINED IN ACCEPTED SHOP SUBMITTAL FOR LIGHTNING PROTECTION SYSTEM.
3. LOCATIONS FOR DOWN CONDUCTORS. EXPOSED DOWN CONDUCTORS SHALL HAVE RIGID (GRC OR ACCEPTABLE EQUIVALENT) PROTECTIVE COVERS UP TO 6'-0" ABOVE GRADE.
4. LOCATION FOR "UFER" BOND FOR STRUCTURE GROUNDING. RUN INTO FOUNDATION, TIE TO STEEL REBAR AND PROVIDE MIN. 20'-0" LENGTH CONDUCTOR WITHIN FOUNDATION CONCRETE. ROUTE STUB UP INTO ROOM.
5. APPROXIMATE LOCATION FOR BUILDING GROUNDING ELECTRODE CONDUCTOR CONNECTION TO GROUND RING.
6. APPROXIMATE LOCATION OF LIGHTNING PROTECTION AIR TERMINALS ON ROOF. FINAL LOCATION TO BE AS SPECIFIED ON THE SHOP DRAWINGS.
7. ROUTE LIGHTNING PROTECTION ROOF CONDUCTORS BETWEEN AIR TERMINALS AND TO DOWN CONDUCTOR LOCATIONS.

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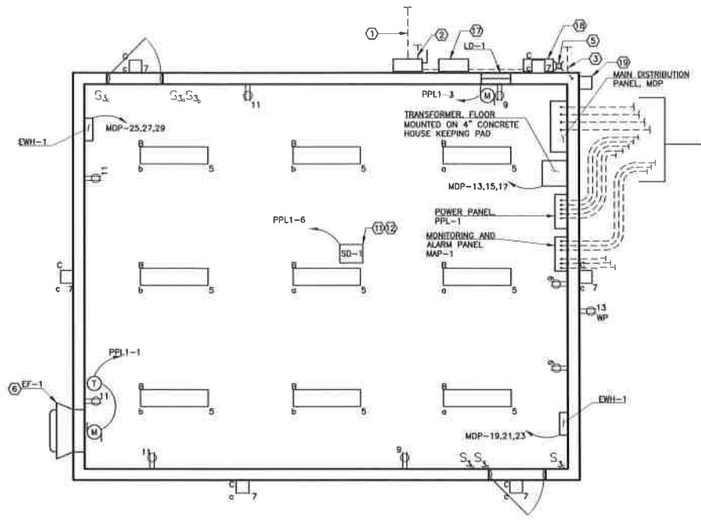
ELECTRICAL ONE-LINE DIAGRAM, SCHEDULE AND DETAILS
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

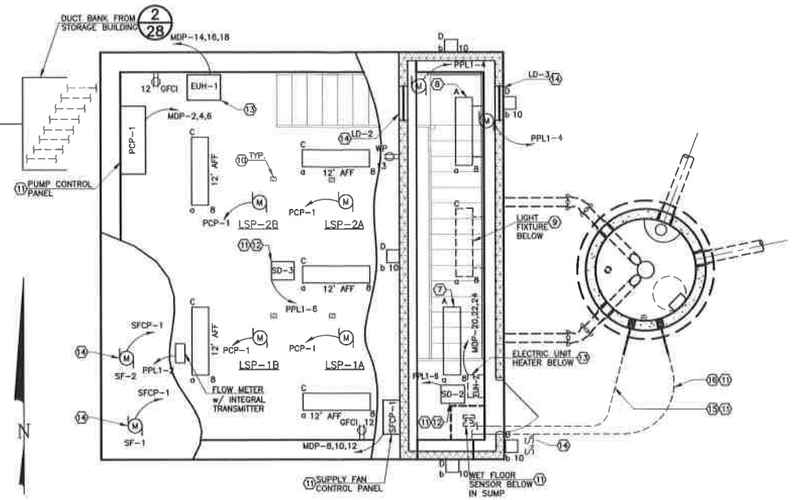
DRAWN SKC
DESIGNED MAM
CHECKED RJS
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET 28 OF 31



STORAGE BUILDING



LIFT STATION DRY PIT AND ACCESS BUILDING

LIFT STATION WET WELL

1/29 POWER AND LIGHTING PLAN

SCALE: 1/4" = 1'-0"

PROJECT: Academy Water and Sanitation District
Lift Station and Force Main Improvements

PANEL MDP

277/480 V, 3PH, 4W
400 A BUS
300 A MCB
10000 AIC COMBINED SHT. CCT. RATING, MIN
SURFACE MOUNTING

CCT.	BRKR.	DESCRIPTION	LIGHTING	RECEPT.	MOTOR	OTHER	SPARE	PH	SPARE	OTHER	MOTOR	RECEPT.	LIGHTING	DESCRIPTION	BRKR.	CCT.
1	30/	SPD						A			37645			PCP-1	175/	2
3								B			37645					4
5	3							C			37645				3	6
7	30/	PHASE MONITOR						A			197			SFCP-1	15/	8
9								B			197					10
11	3							C			197				3	12
13	30/	PPL1	945	2160	180	50	600	A	3322					EUH-1	20/	14
15		15KVA XFMR	300	1440	20	0	1800	B	3322							16
17	3		578	3240	10	0	0	C	3322						3	18
19	15/	EWH 1				996		A	3322					EUH 2	20/	20
21						996		B	3322							22
23	3					996		C	3322						3	24
25	15/	EWH-2				996		A						BUSSED SPACE		26
27						996		B						BUSSED SPACE		28
29	3					996		C						BUSSED SPACE		30

LOAD SUMMARY

LOAD TYPE:	PH A	PH B	PH C	TOTALS				DEMAND FACTOR	DEMAND KVA
LIGHTING	0.95	0.30	0.58	1.82	KVA	ALL	1.82	1.25	2.28
RECEPTACLES	2.16	1.44	3.24	6.84	KVA	1st 10KW	6.84	1.00	6.84
						REMAIN.	0.00	0.50	0.00
MOTORS	36.82	36.66	38.65	116.14	KVA	LRGST.	37.65	1.25	47.06
						REMAIN	78.49	1.00	78.49
OTHER	8.69	8.64	8.64	25.96	KVA	ALL	25.96	1.00	25.96
SPARE	0.80	1.80	0.00	2.40	KVA	ALL	2.40	1.25	3.00
TOTALS	51.22	50.84	51.10	153.18	KVA				163.63
				MINIMUM PANELBOARD AMPACITY:					196.81

PROJECT: Academy Water and Sanitation District
Lift Station and Force Main Improvements

PANEL PPL1

120/240 V, 1PH, 3W
100 A BUS
100 A MCB
10000 AIC COMBINED SHT. CCT. RATING, MIN
SURFACE MOUNTING

CCT.	BRKR.	DESCRIPTION	LIGHTING	RECEPT.	MOTOR	OTHER	SPARE	PH	SPARE	OTHER	MOTOR	RECEPT.	LIGHTING	DESCRIPTION	BRKR.	CCT.
1	15/1	EF-1			180			A		53				FLOW METER	15/1	2
3	15/1	LD-1			10			B			10			LD-2 AND LD-3	15/1	4
5	15/1	INTERIOR LIGHTING - BUILDING	576					C			10			SMOKE DETECTORS	15/1	6
7	15/1	EXTERIOR LIGHTING - BUILDING	900					A					448	INTERIOR LIGHTING - DRY PIT	15/1	9
9	15/1	INT. RECEPTACLES - BUILDING		1440				B					300	EXTERIOR LIGHTING - DRY PIT	15/1	10
11	15/1	INT. RECEPTACLES - BUILDING		1440				C				1800		INT. RECEPTACLES - DRY PIT	20/1	12
13	20/1	EXTERIOR RECEPTACLES		2160				A	600					SPARE	20/1	14
15	20/1	SPARE					600	B	1200					BUSSED SPACE (FUTURE)		16
17		BUSSED SPACE						C						BUSSED SPACE		18
19		BUSSED SPACE						A						BUSSED SPACE		20
21		BUSSED SPACE						B						BUSSED SPACE		22
23		BUSSED SPACE						C						BUSSED SPACE		24
25		BUSSED SPACE						A						BUSSED SPACE		26
27		BUSSED SPACE						B						BUSSED SPACE		28
29		BUSSED SPACE						C						BUSSED SPACE		30
								A								
								B								
								C								
								A								
								B								
								C								

LOAD SUMMARY

LOAD TYPE:	PH A	PH B	PH C	TOTALS				DEMAND FACTOR	DEMAND KVA
LIGHTING	0.95	0.30	0.58	1.82	KVA	ALL	1.82	1.25	2.28
RECEPTACLES	2.16	1.44	3.24	6.84	KVA	1st 10KW	6.84	1.00	6.84
						REMAIN.	0.00	0.50	0.00
MOTORS	0.18	0.02	0.01	0.21	KVA	LRGST.	0.18	1.25	0.23
						REMAIN	0.03	1.00	0.03
OTHER	0.05	0.00	0.00	0.05	KVA	ALL	0.05	1.00	0.05
SPARE	0.60	1.80	0.00	2.40	KVA	ALL	2.40	1.25	3.00
TOTALS	3.94	3.56	3.83	11.32	KVA				12.43
				MINIMUM PANELBOARD AMPACITY:					51.77

LUMINAIRE SCHEDULE

MARK	MANUFACTURER	CATALOG NO.	LAMPS QTY/TYPE	FINISH	MOUNTING	WATTAGE	VOLTAGE	REMARKS
A	LITHONIA OR EQUAL	DMW SERIES	2/FO32T8	WHITE	CEILING/ PENDANT	64	120	4' ENCLOSED / GASKETED FLUORESCENT WITH FIBERGLASS HOUSING, SHATTER RESISTANT ACRYLIC DIFFUSER, UL WET LOCATION LISTED, LOW TEMPERATURE ELECTRONIC BALLAST.
B	LITHONIA OR EQUAL	ST SERIES	2/FO32T8	WHITE	CEILING/ PENDANT	64	120	4' ENCLOSED VOLUMETRIC FLUORESCENT WITH STEEL HOUSING, IMPACT RESISTANT ACRYLIC DIFFUSER, SUITABLE FOR DAMP LOCATIONS ELECTRONIC BALLAST.
C	LITHONIA OR EQUAL	FWB SERIES	2/32T8	WHITE	CEILING/ PENDANT	64	120	4' ENCLOSED / GASKETED FLUORESCENT HIGH BAY WITH ALUMINUM HOUSING, HIGH PERFORMANCE OPTIC WITH 85% TOTAL REFLECTANCE, CLEAR ACRYLIC LAMP SHIELD, INSTANT START, HIGH BF ELECTRONIC BALLAST SUITABLE FOR WET LOCATION.
D	LITHONIA OR EQUAL	TWAC SERIES	100W HPS	DARK BRONZE	WALL	100	120	CUT OFF MINI WALL PACK, UV RESISTANT POLYCARBONATE COVER, ELECTRONIC BALLAST, WITH INTEGRAL PHOTOCELL.

NOTE:
A. ALL FLUORESCENT FIXTURES SHALL BE FURNISHED WITH INSTANT START, ELECTRONIC BALLASTS WITH <10% THD.

ELECTRIC WALL HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	HEATING OUTPUT KW	AIR CFM	MOTOR WATTS	AMPS	VOLT / PHASE	APPROX. WEIGHT	NOTES
EWH-1	REZNOR	EHC-3	3.0	160	N/A	6.3	480/3	24 lbs.	1,2
EWH-2	REZNOR	EHC-3	3.0	160	N/A	6.3	480/3	24 lbs.	1,2

NOTES:
1. PROVIDE WITH RECESSED MOUNTING KIT AND INTERNAL T-STAT.
2. OR EQUIVALENT MANUFACTURER

ELECTRIC UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	HEATING OUTPUT KW	AIR CFM	MOTOR WATTS	AMPS	VOLT / PHASE	APPROX. WEIGHT, LBS.	NOTES
EUH-1	DAYTON	2YU70	10.0	650	N/A	12.0	480/3	40	1,2,3,4
EUH-2	DAYTON	2YU70	10.0	650	N/A	12.0	480/3	40	1,2,3,4

NOTES:
1. PROVIDE STAINLESS STEEL UNISTRUT FOR MOUNTING TO CEILING.
2. MOUNT AS HIGH AS POSSIBLE PER MANUFACTURER'S RECOMMENDATIONS.
3. LOCATED IN LIFT STATION DRY PIT.
4. OR EQUIVALENT MANUFACTURER

FAN SCHEDULE

MARK	MANUFACTURER	MODEL	CFM	E.S.P. (in WC)	MOTOR HP	RPM	VOLT/PHASE	DRIVE	TYPE	NOTES
EF-1	GREENHECK	CW-095	400	0.125	1/20	1050	120/1	DIRECT	WALL MOUNT	1,4,8
SF-1	CINCINNATI FAN	HDAF-160	3400	0.50	1.5	1800	480/3	BELT	DECK MOUNT	2,3,5,6,7,8
SF-2	CINCINNATI FAN	HDAF-120	700	0.50	0.5	1400	480/3	BELT	DECK MOUNT	2,3,5,6,7,8

NOTES:
1. LOCATED ON WEST WALL OF STORAGE BUILDING.
2. LOCATED ON LIFT STATION DRY PIT DECK, OUTDOORS.
3. MOTOR HP AND RPM ARE THE MAXIMUM ALLOWABLE.
4. CONTRACTOR SHALL PROVIDE: LINE VOLTAGE THERMOSTAT, WALL MOUNTING, BACKDRAFT DAMPER AND INTERLOCK TO WALL LOUVER.
5. ACMA SPARK RESISTANT CONSTRUCTION CLASS A.
6. PROVIDE WITH COMBINATION DISCONNECT/CONTROL PANEL WITH MOTOR STARTERS AND INTERLOCK TO WALL LOUVERS.
7. PROVIDE 90° INLET WEATHER HOOD AND BIRD SCREEN.
8. OR EQUIVALENT MANUFACTURER

LOUVER SCHEDULE

MARK	MANUFACTURER	MODEL	MAX. AIRFLOW	MAX. A.P.D. (inWC)	SIZE (W"x H")	MIN. FREE AREA (SQ. FT.)	TYPE	MATERIAL	SERVICE	NOTES
LD-1	GREENHECK	EACC-601	400	0.125	21"x24"	0.47	LOUVER/DAMPER	ALUMINUM	INTAKE	1,2,5
LD-2	GREENHECK	EACC-601	2050	0.5	26"x36"	1.89	LOUVER/DAMPER	ALUMINUM	EXHAUST	1,3,5
LD-3	GREENHECK	EACC-601	2050	0.5	26"x36"	1.89	LOUVER/DAMPER	ALUMINUM	EXHAUST	1,4,5

NOTES:
1. PROVIDE FACTORY FINISH IN COLOR SELECTED BY OWNER
2. PROVIDE MOTORIZED DAMPER INTERLOCKED WITH EXHAUST FAN EF-1, INVENSYS 120V, CONCEALED 5W ACTUATOR.
3. PROVIDE MOTORIZED DAMPER INTERLOCKED WITH SUPPLY FAN SF-1, INVENSYS 120V, CONCEALED 5W ACTUATOR.
4. PROVIDE MOTORIZED DAMPER INTERLOCKED WITH SUPPLY FAN SF-2, INVENSYS 120V, CONCEALED 5W ACTUATOR.
5. OR EQUIVALENT MANUFACTURER

ELECTRICAL GENERAL NOTES

1. ALL ELECTRICAL MATERIALS AND WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, 2014 EDITION.
2. CONDUCTOR SIZES BASED ON AMPACITY OF COPPER CONDUCTORS AS LISTED IN NEC TABLE 310.
3. PROVIDE LIGHTNING PROTECTION SYSTEM PER PROJECT SPECIFICATIONS. REFER TO LIGHTNING PROTECTION PLAN. GROUND TO GROUND LOOP.
4. PROVIDE CONDUIT AND CONDUCTORS BETWEEN PANELS FOR EQUIPMENT POWER, MONITORING AND CONTROL SIGNALS, AS SPECIFIED.

KEYED NOTES

1. SERVICE ENTRANCE SEE ONE-LINE DIAGRAM AND PROPOSED SITE PLAN.
2. GROUND SERVICE ENTRANCE DISCONNECT TO GROUND RING.
3. UFER GROUNDING ELECTRODE, GROUND TO GROUND RING.
4. DUCT BANK SHALL INCLUDE (3) 1-1/2", (18) 1" CONDUITS MINIMUM, TO LIFT STATION, CONFIRM REQUIRED CONDUIT SIZING AND COUNT TO PROVIDE MINIMUM (5) 1" AND (1) 1-1/2" SPARES. PROVIDE PULL CHORD IN ANY EMPTY CONDUIT.
5. ALARM STROBE UNDER SOFFIT. MOUNT AS HIGH AS POSSIBLE. ALARM STROBE TO ACTIVATE WITH ANY FAULT OR ALARM IN FACILITY.
6. EXHAUST FAN. COOLING THERMOSTAT SHALL BE LINE VOLTAGE TYPE. LOUVER/DAMPER LD-1 SHALL OPEN WITH EXHAUST FAN ON.
7. FIXTURE SHALL BE PENDANT MOUNTED FROM CEILING MIN. 8' AFF.
8. FIXTURE SHALL BE WALL MOUNTED 9'-0" ABOVE LANDING WITH STAINLESS STEEL UNISTRUT OR EQUAL.
9. FIXTURE SHALL BE WALL MOUNTED AS HIGH AS POSSIBLE BELOW STAIRS AND CENTERED BETWEEN SUCTION PIPES WITH STAINLESS STEEL UNISTRUT OR EQUAL.
10. LOCKABLE EMERGENCY PUSH BUTTON OFF FOR PUMP. CONDUIT AND CONDUCTOR RUNS TO PCP-1 SHALL INCLUDE EMERGENCY POWER OFF BUTTON AND MONITORING AND CONTROL DEVICES AS SPECIFIED.
11. PROVIDE CONDUIT AND CONDUCTORS TO MONITORING AND ALARM PANEL AS SPECIFIED.
12. SMOKE DETECTOR, CEILING MOUNT IN ACCESSIBLE LOCATION.
13. MOUNT AS HIGH AS POSSIBLE PER MANUFACTURER'S RECOMMENDATIONS WITH STAINLESS STEEL UNISTRUT AND HARDWARE. DIRECT DISCHARGE TOWARD SUPPLY FAN DISCHARGE.
14. SUPPLY FANS AND LOUVER/DAMPERS SHALL BE INTERLOCKED WITH THE INTERIOR LIGHT SWITCH. SEE MECHANICAL EQUIPMENT SCHEDULES AND SPECIFICATIONS FOR DETAILS AND CONTROL REQUIREMENTS.
15. PRESSURE TRANSMITTER OF PRIMARY LEVEL CONTROL SYSTEM WITH CONDUIT AND CONDUCTORS TO PUMP CONTROL PANEL
16. FLOATS OF BACKUP LEVEL CONTROL SYSTEM WITH CONDUIT AND CONDUCTORS TO PUMP CONTROL PANEL
17. MANUAL TRANSFER SWITCH
18. SPLICE BOX FOR PORTABLE GENERATOR CONNECTION
19. RADIO TRANSMITTER OF NEW LIFT STATION TO EXISTING WATER TREATMENT PLANT. PROVIDE MOUNTING HARDWARE AND POSITION AS NECESSARY FOR LINE-OF-SIGHT COMMUNICATION WITH WATER TREATMENT PLANT RECEIVER LOCATED NEAR SOUTH END OF EAST WALL.

GENERAL NOTES:

1. SEE THIS SHEET FOR ELECTRIC HEATER, FAN AND LOUVER SCHEDULES.
2. SEE SHEET 28 FOR AN ABBREVIATION LISTING AND SYMBOL LEGEND.
3. ALL WIRING AND CONDUIT SHALL BE CONCEALED IN FRAMED WALLS AND ATTIC WHEREVER POSSIBLE. ALL RECEPTACLES AND DEVICE PLATES SHALL BE FLUSH MOUNTED IN FRAMED WALLS.

HVAC GENERAL NOTES:

1. THESE NOTES APPLY TO THE STORAGE BUILDING, DRY PIT AND ACCESS BUILDING OF THE LIFT STATION.
2. SEE SHEET 18 FOR STORAGE BUILDING HVAC EQUIPMENT REQUIREMENTS.
3. SEE DECK PLAN ON SHEET 23 AND PIPING DETAILS ON SHEET 26 FOR LIFT STATION HVAC EQUIPMENT AND DUCTING REQUIREMENTS.
4. ALL DUCTWORK IN THE LIFT STATION DRY PIT SHALL BE LOW PRESSURE TYPE ALUMINUM. STORAGE BUILDING DUCTWORK MAY BE GALVANIZED METAL.
5. COORDINATE DUCT LOCATIONS WITH PROCESS EQUIPMENT, LIGHTING AND OTHER TRADES.
6. LOUVER/DAMPER LD-1 SHALL OPEN WHEN EXHAUST FAN EF-1 IS CALLED TO RUN BY COOLING T-STAT.
7. LOUVER/DAMPER LD-2 SHALL OPEN WITH SUPPLY FAN SF-1 RUNNING.
8. LOUVER/DAMPER LD-3 SHALL OPEN WITH SUPPLY FAN SF-2 RUNNING.
9. SUPPLY FANS SF-1 AND SF-2 SHALL BE INTERLOCKING WITH THE INTERIOR LIGHT SWITCH OF THE LIFT STATION DRY PIT. REFER TO SPECIFICATIONS FOR REQUIRED RUN TIMES AND OPERATIONAL CONTROL.
10. SUPPLY FAN DUCTS SHALL DISCHARGE 1'-0" ABOVE FINISH FLOOR TOWARD THE SOUTHWEST CORNER OF THE LIFT STATION DRY PIT.
11. ELECTRIC UNIT HEATERS SHALL BE MOUNTED AS HIGH AS POSSIBLE WITH DISCHARGES DIRECTED TOWARD THE SOUTHWEST CORNER OF THE LIFT STATION DRY PIT.

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BASE DWG: G:\
PLOT STYLE FILE: 1050C.ctb
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POWER AND LIGHTING PLAN, POWER PANELS AND EQUIPMENT SCHEDULES

LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
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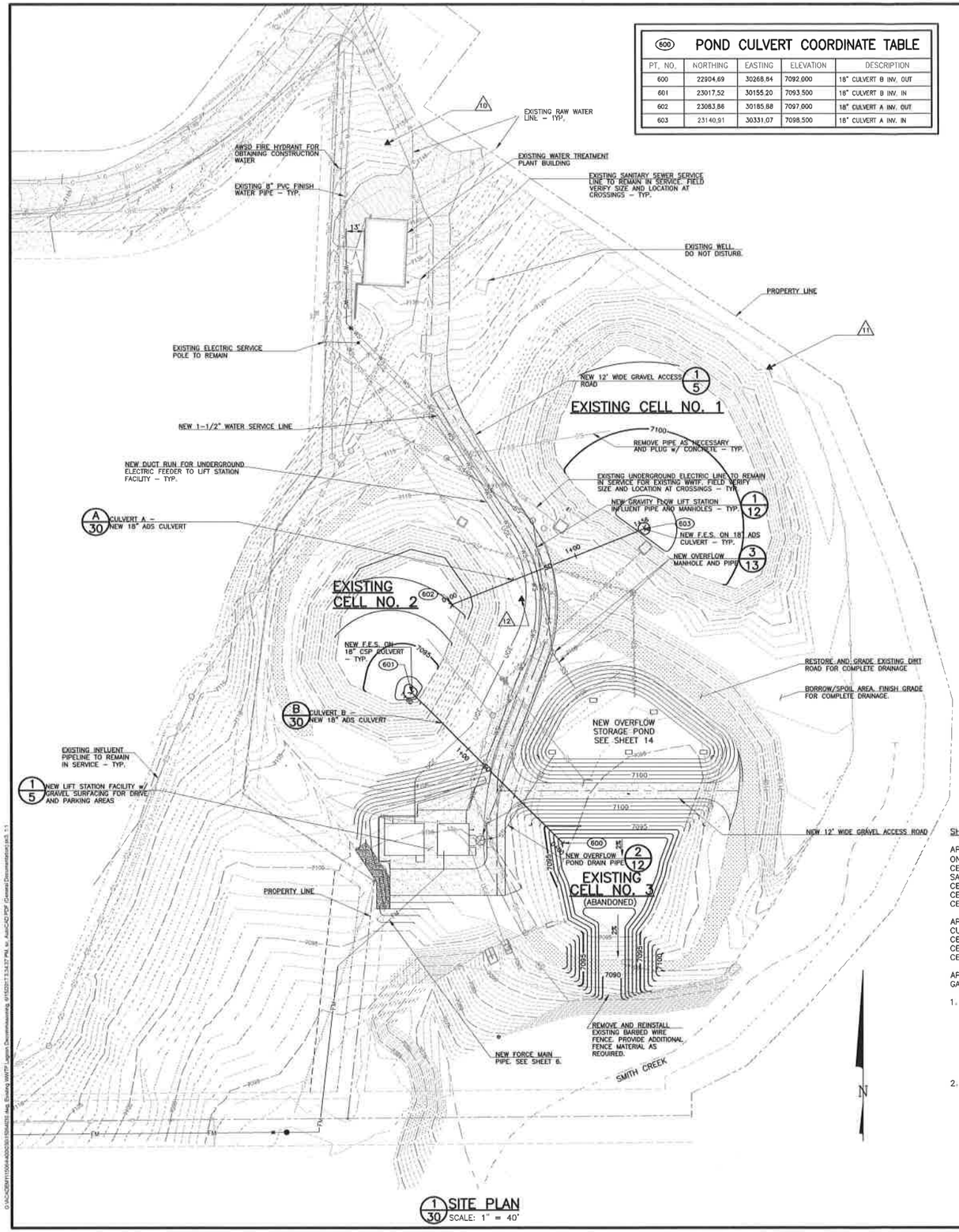
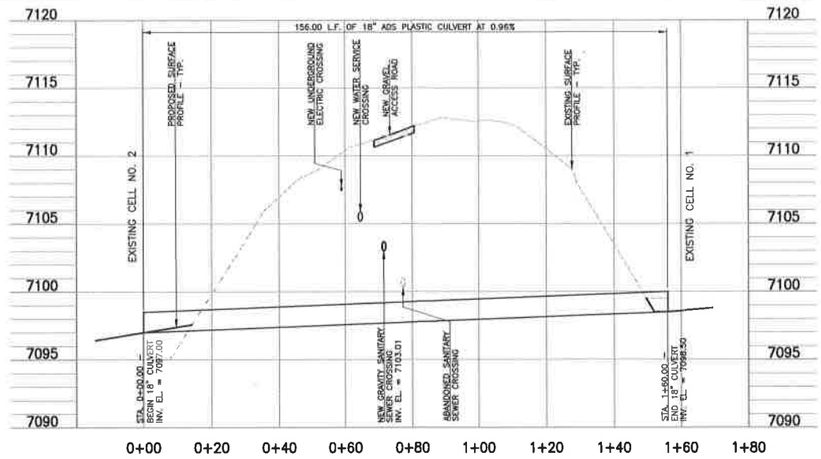
SHEET 29 OF 31

(500) POND CULVERT COORDINATE TABLE

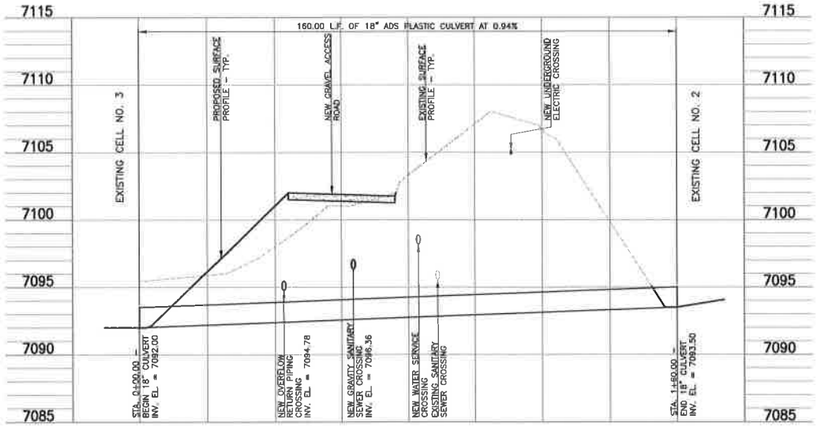
PT. NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
600	22904.69	30268.84	7092.000	18" CULVERT B INV. OUT
601	23017.52	30155.20	7093.500	18" CULVERT B INV. IN
602	23083.88	30185.88	7097.000	18" CULVERT A INV. OUT
603	23140.91	30331.07	7098.500	18" CULVERT A INV. IN



1/30 SITE PLAN
SCALE: 1" = 40'



A/30 CULVERT A – PROFILE
SCALE: HORIZ. 1" = 20'; VERT. 1" = 5'



B/30 CULVERT B – PROFILE
SCALE: HORIZ. 1" = 20'; VERT. 1" = 5'

SHEET NOTES:

APPROXIMATE WATER IMPOUNDMENT IN EXISTING CELLS BASED ON 8' IMPOUNDMENT IN CELL NO. 1 AND 11' IN CELL NO. 2. CELL NO. 3 IS ABANDONED. CONTRACTOR TO VERIFY TO HIS SATISFACTION IMPOUNDMENT DEPTHS AT THE TIME OF BIDDING:
CELL NO. 1 = 1.5 MILLION GALLONS±
CELL NO. 2 = 1.0 MILLION GALLONS±
CELL NO. 3 = 0 GALLONS

APPROXIMATE WATER SURFACE AREAS OF EXISTING CELLS AT CURRENT IMPOUNDMENT DEPTHS:
CELL NO. 1 = 28,100 S.F.±
CELL NO. 2 = 18,400 S.F.±
CELL NO. 3 = 0 S.F.±

APPROXIMATE CURRENT HYDRAULIC LOADING = 39,400 GALLONS PER DAY

1. CONTRACTOR TO DECANT WATER FROM EXISTING CELLS INTO INFLUENT PIPELINE MANHOLES AFTER LIFT STATION/FORCE MAIN STARTUP HAS BEEN COMPLETED AND IS ACCEPTED. AVOID PUMPING BIOSOLIDS INTO COLLECTION SYSTEM. CONTRACTOR SHALL CLOSELY MONITOR DECANT RATES SO THE COMBINED FLOW INTO THE LIFT STATION OF SYSTEM FLOWS PLUS DECANT FLOWS DOES NOT EXCEED THE 140gpm CAPACITY OF ONE PUMP TRAIN.
2. CONTRACTOR TO DRY BIOSOLIDS IN THE BOTTOMS OF EACH CELL. WINDROW AND DRY BIOSOLIDS SUFFICIENT TO PASS PAINT FILTER TEST. ONCE BIOSOLIDS ARE IN A CONDITION TO BE REMOVED, THE CONTRACTOR IS TO PROPERLY REMOVE, HAUL AND DISPOSE OF THE BIOSOLIDS AT THE CUBIC YARD UNIT PRICE ESTABLISHED IN THE BID FORM IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS AND THE SPECIFICATIONS. THE CONTRACTOR SHALL USE CARE TO NOT REMOVE SUBSTANTIAL SOIL WITH THE BIOSOLIDS. BIOSOLIDS ARE ESTIMATED AT 2' IN DEPTH IN CELL NO. 1 AND 1' IN DEPTH IN CELL NO. 2. THEY SHOULD CONSOLIDATE SIGNIFICANTLY BEYOND THAT WHEN DRIED. THE CONTRACTOR IS TO VERIFY QUANTITIES TO HIS SATISFACTION.
3. CONFINE CONSTRUCTION ACTIVITIES TO OWNER'S PROPERTY.
4. THE ENGINEER'S CALCULATIONS FOR OVERALL DIRT WORK ASSOCIATED WITH DECOMMISSIONING EXISTING CELL NOS. 1 AND 2 AND GRADING CELL NO. 3 FOR COMPLETE DRAINAGE INDICATE APPROXIMATELY 1,170 CUBIC YARDS OF CUT WILL BE UNDERTAKEN. FILL, WITH NO COMPACTION FACTOR FOR THE SAME AREA, WILL CONSIST OF APPROXIMATELY 885 CUBIC YARDS. COMPACTION IS REQUIRED AT 80% OF MODIFIED PROCTOR DENSITY. ALL EARTHWORK IS TO BE UNDERTAKEN AT THE LUMP SUM PRICE CONTAINED ON THE BID FORM. IMPORTATION OF ADDITIONAL MATERIAL IS NOT REQUIRED. THE CONTRACTOR MAY UTILIZE THE BORROW/SPOIL AREA AS NECESSARY AND FINISH GRADE IT FOR COMPLETE DRAINAGE. THESE ESTIMATES ARE BASED ON ASSUMED POND CONFIGURATIONS. THE CONTRACTOR IS TO VERIFY QUANTITIES TO HIS SATISFACTION.
5. SEPARATE EARTHWORK QUANTITIES FOR THE LIFT STATION SITE AND OVERFLOW POND ARE GIVEN ON SHEET 5.
6. BLEND NEW CONTOURS INTO EXISTING PERIMETER CONTOURS. GRADING IS SUBJECT TO THE ENGINEER'S APPROVAL.
7. THE CONTRACTOR IS TO PREPARE ALL REQUIRED DOCUMENTATION ON THE BIOSOLIDS DISPOSAL FOR SUBMISSION TO THE CDPHE ON BEHALF OF THE OWNER. SEE THE SPECIFICATIONS FOR THE DETAILED REQUIREMENTS.
8. STRIP, STOCKPILE AND REINSTALL TOPSOIL IN ALL AREAS OF DISTURBANCE. FINAL GRADING WITHIN EXISTING CELLS SHALL PROVIDE COMPLETE DRAINAGE THROUGH ALL CELLS AND TO SMITH CREEK. FINISH GRADE SLOPES ACROSS THE BOTTOMS OF THE EXISTING PONDS SHALL BE 2% MINIMUM.
9. UPON COMPLETION OF FINAL GRADING, ALL DISTURBED AREAS, INCLUDING SIDE SLOPES OF EXISTING PONDS WHICH WERE BELOW THE WATER SURFACE, SHALL BE SEEDED.
10. GRADING AND WORK REQUIREMENTS ASSOCIATED WITH THE LIFT STATION AND OVERFLOW POND ARE NOT SHOWN IN THEIR ENTIRETY. REFER TO SHEET 5 FOR DETAILS.

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PLOT STYLE FILE: 15060 CTB
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EXISTING WWTF LAGOON DECOMMISSIONING
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

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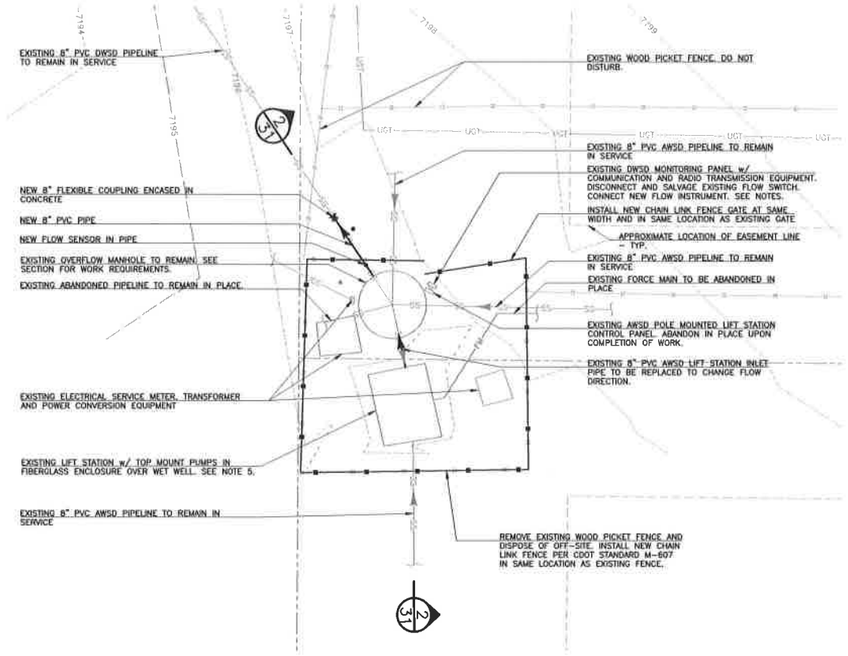
SHEET 30 OF 31

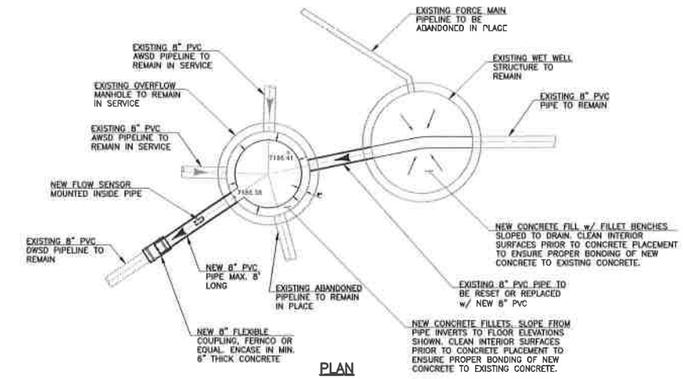


NOTES:

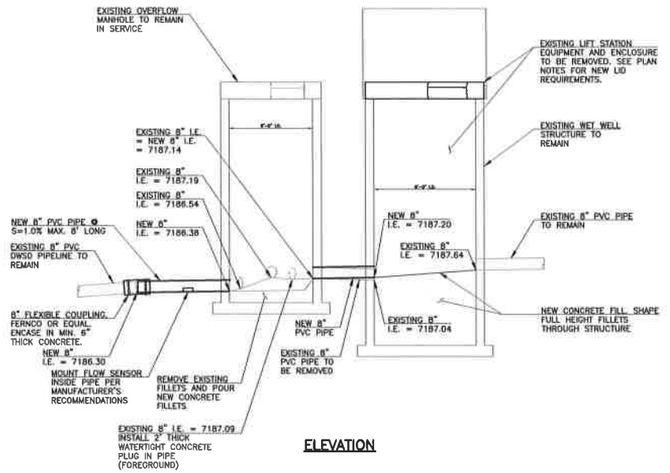
1. EXISTING FLOW SWITCH AND CONDUCTORS BELONG TO DWSD. REMOVE AND DELIVER TO DWSD. COORDINATION IS REQUIRED WITH BOTH AWSD AND DWSD FOR THE WORK REQUIRED WITHIN THEIR RESPECTIVE CONTROL AND COMMUNICATIONS PANELS.
2. THE NEW FLOW INSTRUMENT SHALL HAVE THE FLOW SENSOR MOUNTED IN THE PIPE AND DISPLAY UNIT MOUNTED IN THE DWSD PANEL. LANDING OF THE NEW HIGH FLOW ALARM SIGNAL MAY BE IN SAME LOCATION AS EXISTING FLOW SWITCH. REFER TO THE SPECIFICATIONS FOR INSTRUMENT DETAILS.
3. OTHER UNDERGROUND UTILITIES THAT ARE NOT SHOWN MAY EXIST WITHIN THE LIFT STATION SITE. THE CONTRACTOR SHALL USE EXTREME CARE IN FIELD LOCATING AND PROTECTING ALL EXISTING UTILITIES.
4. FIELD VERIFY ALL EXISTING PIPE AND STRUCTURE CONDITIONS PRIOR TO CONSTRUCTION. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN DESIGN AND EXISTING CONDITIONS.
5. REMOVE ALL EXISTING PUMP STATION EQUIPMENT FROM WET WELL AND DISPOSE OF OFF-SITE. DISCONNECT ELECTRICAL AND CONTROL WIRING AND CAP AND SEAL CONDUIT AND CONDUCTORS WATERTIGHT FOR ABANDONMENT. GROUT ALL PENETRATIONS INTO WET WELL WATERTIGHT. UPON REMOVAL OF FIBERGLASS LID/ENCLOSURE, PREPARE TOP OF WET WELL BARREL FOR NEW PRECAST CONCRETE LID WITH 24" CAST IRON RING AND COVER AND H20 RATING. INSTALL RAM-NECK OR EQUAL GASKET AND SET NEW LID PLUMB AND LEVEL.
6. NEW PIPE SEGMENTS SHOWN MAY BE CONSTRUCTED WITH SALVAGED EXISTING PIPE IF THAT PIPE IS IN ACCEPTABLE CONDITION AND APPROVED BY THE OWNER AND ENGINEER. OTHERWISE, NEW PIPE MATERIAL WILL BE REQUIRED.
7. COORDINATION WITH ADJACENT PROPERTY OWNERS IS REQUIRED FOR ALL WORK CONDUCTED AT THE EXISTING LIFT STATION SITE.
8. PROVIDE BYPASS PUMPING PLAN FOR REVIEW BY OWNER AND ENGINEER PRIOR TO INITIATING CONSTRUCTION. SEE SHEET 3 FOR NEARBY COLLECTION SYSTEM MANHOLES.

N

1/31 EXISTING LIFT STATION NO. 1 SITE PLAN
SCALE: 1" = 5'



PLAN

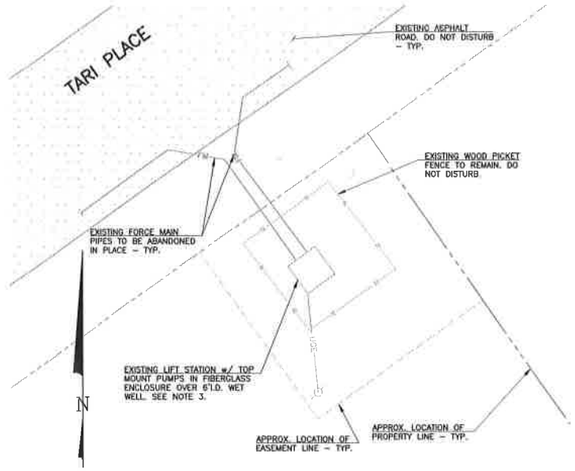


ELEVATION

NOTES:

1. REWORK PIPE PENETRATIONS AS NECESSARY FOR NEW 8" PIPE AND GROUT WATERTIGHT.
2. FIELD VERIFY EXISTING STRUCTURE AND PIPE INVERT ELEVATIONS PRIOR TO CONSTRUCTION.

2/31 PIPE AND STRUCTURE DETAIL
SCALE: 1" = 4'



NOTES:

1. OTHER UNDERGROUND UTILITIES THAT ARE NOT SHOWN MAY EXIST WITHIN THE LIFT STATION SITE. THE CONTRACTOR SHALL USE EXTREME CARE IN FIELD LOCATING AND PROTECTING ALL EXISTING UTILITIES.
2. FIELD VERIFY ALL EXISTING PIPE AND STRUCTURE CONDITIONS PRIOR TO CONSTRUCTION. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN DESIGN AND EXISTING CONDITIONS.
3. REMOVE ALL EXISTING PUMP STATION EQUIPMENT FROM WET WELL AND DISPOSE OF OFF-SITE. DISCONNECT ELECTRICAL AND CONTROL WIRING AND CAP AND SEAL CONDUIT AND CONDUCTORS WATERTIGHT FOR ABANDONMENT. GROUT ALL PENETRATIONS INTO WET WELL WATERTIGHT AND INSTALL 2' THICK CONCRETE PLUG. UPON REMOVAL OF FIBERGLASS LID/ENCLOSURE, PREPARE TOP OF WET WELL BARREL FOR NEW PRECAST CONCRETE LID WITH 24" CAST IRON RING AND COVER AND H20 RATING. INSTALL RAM-NECK OR EQUAL GASKET AND SET NEW LID PLUMB AND LEVEL.
4. COORDINATION WITH ADJACENT PROPERTY OWNERS IS REQUIRED FOR ALL WORK CONDUCTED AT THE EXISTING LIFT STATION SITE.

3/31 EXISTING LIFT STATON NO. 2 SITE PLAN
SCALE: 1" = 10'

XREF FILENAME: G:\
BASE DWG: G:\
PLOT STYLE FILE: 100dpi.CTB
FILENAME: G:\ACADEMY\15064\400\031\15064031.DWG

EXISTING LIFT STATION DECOMMISSIONING
LIFT STATION AND FORCE MAIN IMPROVEMENTS
ACADEMY WATER & SANITATION DISTRICT

DRAWN SKC
DESIGNED MAM
CHECKED EDM
DATE JUNE 2017
PROJECT NO. 15064.400
GMS FILE NO. 2801

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET 31 OF 31