AMBRIDGE
AREA HIGH SCHOOL

BRANDON C. McKEE
CONSTRUCTION MANAGEMENT
AMBRIDGE AREA HIGH SCHOOL
AMBRIDGE, PENNSYLVANIA
ADVISOR: DR. JOHN MESSNER
TECHNICAL ASSIGNMENT 2
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EXECUTIVE SUMMARY

This technical report provides an introductory analysis to the execution of construction at Ambridge Area High School (AAHS), in Ambridge, Pennsylvania. This assignment will analyze a detailed project schedule, site layout planning for a critical phase of construction, assemblies estimate, structural system estimate and a general conditions estimate. These items all have a dramatic affect on the execution of the project.

The AAHS used a traditional Design-Bid-Build delivery system with multiple prime contracts with a construction manager. The first analysis is the detailed project schedule. The new AAHS will replace the existing building on the project campus and must be completed on time to allow for occupancy and demolition of the existing school. Contracts for the project were awarded on August 17, 2005 with substantial completion set for August 23, 2007. The important milestone events are noted which are crucial to timely completion of construction.

The site layout plan illustrates the superstructure erection phase of the project. A 165 Ton crawler crane, in several locations, erected structural steel members except the sizable plate girder which used a 200 Ton mobile crane. Because the school had no typical bay or module an estimate of the structural system in its entirety was performed. Next an estimate of the exterior façade was performed for the East elevation of the building below the parapet line. Lastly a detailed general conditions estimate was performed for the 24 month duration of the project.

DETAILED PROJECT SCHEDULE

Please see Appendix A for Detailed Project Schedule

Key Project Milestones –

- Contracts Awarded 8/17/05
- Initial Site work Complete 2/27/05
- Topping Out 4/4/06
- Façade Complete 7/12/06
- Building Enclosure 10/17/06
- Ground Floor Complete 6/27/06
- First Floor Complete 6/29/06
- Second Floor Complete 7/30/07
- Start Up Elevators 9/27/06
- Substantial Completion 8/23/07
- Students Return to School 1/7/08

The detailed project schedule of AAHS was divided into the following sections as shown in Appendix A.

Site work – Site work included the demolition of the existing tennis court facility and retaining wall separating the courts from the rest of the project site. Below the wall, an existing baseball field derives the remaining area of the site.

Foundations – The foundation system utilizes perimeter grade beams and interior pile caps on auger cast concrete piles averaging 37' in depth. As Ambridge borders the Ohio River, predominant layers of siltstone and clay forced the use of these deep foundations to attain adequate bearing capacity. A load bearing concrete wall along the east elevation reduces the size of the basement level and places the first floor partially as an elevated slab on deck and a slab on grade where the gymnasium lies.

Structure - Structural steel erection originates on the east side of the building and moves west as the project progresses. Steel was erected using a 165 Ton crawler crane with a 150' fixed jib. The 114' span plate girder, weighing 23 tons was erected using a 200 Ton mobile DEMAG crane allowing the smaller crawler to continue on other parts of the structure simultaneously. Elevated and slabs on grade were poured using a concrete pump in several locations around the building footprint.

Exterior Façade – Erection of exterior CMU, brick façade, windows and curtain wall began on the south elevation adjacent to the building entrance and followed a counterclockwise rotation around the building footprint. Temporary doors will be installed after building enclosure to allow the use of temporary heat through enclosure during winter months and prevent damage from transporting materials through openings.

Roof – Installation of the EPDM roofing membrane over the majority of the roof followed the installation of metal and acoustical roof deck and tapered insulation. Flashing and patchwork around penetrations finalized the installation and allowed for building enclosure.

Ground Floor, 1st Floor, 2nd Floor – Finish work began in the ground level and moved to upper floors as the structural and enclosure phases finished. Finish trades were phased in the following order:

- Interior CMU walls
- Doors in CMU
- Cementitious Fireproofing
- MEP Rough in
- Metal Stud Framing
- Conduit & Boxes
- Insulation
- Gypsum Board
- Prime Paint
- Acoustical Ceiling Grid
- Flooring
- Finish Paint

Elevators & Stairs - Installation of the pit and cylinders was done early in the project with the elevator and equipment following. Temporary stairs were erected in two of the three elevator shafts. Installation and pouring of metal permanent metal stairs will allow for removal of temporary stairs and startup of elevators. Finish flooring in the stairwells will be completed at the end of the project to eliminate damage from construction personnel.

Final Site work - Final grading and seeding begin when work around the building exterior is complete. Grading and pavement of the parking lot occur after demolition of the existing high school building.

Substantial Completion – Project substantial completion will occur on August 23, 2007 allowing time for the owner to move F, F & E from the existing building before its demolition and the students return to school on January 7, 2008.

SITE LAYOUT PLANNING

Please see Appendix B for Detailed Site Plan

The detailed site plans included in Appendix B detail the site layout during the superstructure erection, slab on grade, and elevated slab phase of the project. Access to the site is provided by several gates on both Duss Avenue and 11th Street, with the main delivery entrance for steel via the lower entrance on 11th street. Steel fabrication was done by Sippel Steel in Ambridge, PA, less than 2 miles from the project site. The proximity of the shop location reduced the amount of steel staging areas needed within the site fence, allowing for as many just-in-time deliveries as possible.

Erection of structural steel members used a 165 Ton crawler crane in multiple locations, shown in figure 1 erecting the first structural column.

Figure 1 - Erection of 1st Column

Steel erection began adjacent to the retaining wall separating the 1st floor slab on grade and elevated slab area. Using two crane locations, phase one of steel is erected (See S-101, Appendix B). As shown in figure 2, basement plumbing is finalized as phase 1 steel is complete.

Figure 2 - Basement Slab on Grade

The installation of the 114' long, 23 Ton plate girder had to be well planned as the transportation from Sippel required permits and traffic control as the over size truck navigated the streets of Ambridge (Figure 3). The placement of the girder was accomplished with a 200 Ton DEMAG mobile crane as shown in figure 4.

Figure 3 - Transportation of Plate Girder

Figure 4 - Erection of Plate Girder

Steel erection progressed level by level with pouring of elevated slabs and slabs on grade occurring after structural steel topping out on April 4, 2006 (Figure 5).

Figure 5 - Structural Steel Complete, Metal Deck Beginning

Installation of metal deck followed structural steel erection and was followed with pouring of slabs using a concrete pump in several locations. Several concrete batch plants in close proximity to the project site ensured no shortages of concrete for large pours.

Figure 6 – 1st Floor slab pour underway

Figure 7 – 2nd Floor Decking installed ready for slab pour

ASSEMBLIES ESTIMATE

Please see Appendix C for Assemblies Estimate Notes

An assemblies estimate was prepared for the exterior facade including openings. The AAHS uses a CMU backup faced with red and gray Norman brick, with precast concrete window sills and a water table band. Aluminum clad windows, doors, and curtain wall occur on all elevations. The east elevation is covered in this estimate, comprised of a two story elevation and includes all façade items below the parapet line. The elevation under construction is shown in figure 8.

Figure 8 – East Elevation Facade

For the East elevation a cost for exterior façade was $163,192, amounting to $15.36 / SF of façade area as shown below in figure 9.

AAHS Exterior Facade Estimate As Prepared by Brandon C. McKee							
Drawing # A202 & A301							
Total Façade Area = 10,625 SF - 322' - 6" LF							
			Cost per Unit			Total	Category
Description	**Qty.**	**Unit**	**Mat.**	**Inst.**	**Total**	**Cost**	**Total**
FAÇADE							
Face Brick	7754	SF	$2.17	$2.39	$4.56	$35,358	
Soldier Course	432.00	LF	$2.05	$2.35	$4.40	$1,901	
2 " Insulation Board	7754.00	SF	$1.29	$0.34	$1.63	$12,639	
CMU Backup	7754.00	SF	$1.96	$3.77	$5.73	$44,430	
Contraction Joint	816.00	LF	$7.45	$1.45	$8.90	$7,262	
Precast Window Sills	231.00	LF	$10.80	$10.60	$21.40	$4,943	
Precast Emblems	3	EA	$500.00	$425.00	$925.00	$2,775	
Precast Water Table Band	187.50	LF	$19.50	$3.56	$23.06	$4,324	
Painted Mineral Fiber Siding	252.00	SF	$0.93	$1.31	$2.24	$564	
Window W1	24	EA	$299.00	$138.00	$437.00	$10,488	
Window W2	16	EA	$299.00	$138.00	$437.00	$6,992	
Window W3	2	EA	$299.00	$138.00	$437.00	$874	
Curtain wall C8	492	SF	$18.60	$14.60	$33.20	$16,334	
Curtain wall C9	200	SF	$18.60	$14.60	$33.20	$6,640	
Aluminum Entrance Doors	2	EA	$1,875.00	$1,300.00	$3,175.00	$6,350	
Aluminum Metal Trim	322.50	LF	$1.62	$2.46	$4.08	$1,316	
							$163,192

Figure 9 - Assemblies Estimate

DETAILED STRUCTURAL SYSTEMS ESTIMATE

Please see Appendix D for Detailed Structural Systems Notes

This detailed structural systems estimate was prepared using R.S. Means Building Construction Cost Data 2005, since the project was bid in 2005.

The total location adjustment factor for Pittsburgh, PA is 99.9, and therefore will be neglected in the estimate.

After preparing a detailed estimate as shown below and in Appendix D, the cost of the structural system amounted to $6,010,413, and a total cost to the project of $24.50 / SF.

AAHS Structural System Estimate
As Prepared by Brandon C. McKee

Description	Qty.	Unit	Cost per Unit Mat.	Inst.	Equip.	Total	Total Cost	Category Total
FOUNDATIONS								
Auger Cast Piles	821	EA	575.00	315.00		890.00	$730,690	
Reinforcing	82.10	Ton	760.00	580.00		1,340.00	$110,014	
								$840,704
Grade Beams	256.41	CY	226.00	45.00	0.29	271.29	$69,561	
Formwork	9501.89	SF	0.63	2.67		3.30	$31,356	
Reinforcing	22.11	Ton	800.00	760.00		1,560.00	$34,492	
								$135,409
Pile Caps	1567.44	CY	108.00	49.00		157.00	$246,089	
Formwork	19404.00	SF	0.63	2.67		3.30	$64,033	
Reinforcing	46.34	Ton	800.00	760.00		1,560.00	$72,290	
								$382,412
								$1,358,525
SUPERSTRUCTURE								
Structural Steel Framing								
Structural Steel Beams	545.89	Ton	2,558.00	360.00	169.00	3,087.00	$1,685,169	
Plate Girder	23	Ton	2,558.00	260.00	169.00	2,987.00	$68,221	
Structural Steel Roof Framing	210	Ton	2,558.00	260.00	169.00	2,987.00	$626,477	
								$2,379,867
Roof Joists	79	Ton	1,200.00	177.00	87.50	1,464.50	$115,828	
								$115,828
Metal Floor Deck	161055	SF	1.14	0.25	0.02	1.41	$227,088	
								$227,088
Roof Deck								
Metal Roof Deck	77410	SF	1.14	0.25	0.02	1.41	$109,148	
Acoustical Roof Deck	24275	SF	1.31	0.29	0.02	1.62	$39,362	
								$148,510

Continued on the Next Page

Concrete Slab on Grade								
Formwork	643.5	SF	2.10	2.96		5.06	$3,256	
Concrete	1079.72	CY	84.00	14.15	5.80	103.95	$112,237	
Reinforcing	906.45	CSF		25.50		25.50	$23,114	
Finishing	84270.00	SF		0.48		0.48	$40,450	
								$179,057
Concrete Slab on Deck								
Formwork	891.00	SF	2.10	2.96		5.06	$4,508	
Concrete	1247.06	CY	84.00	14.15	5.80	103.95	$129,632	
Reinforcing	1610.55	CSF		19.60		19.60	$31,567	
Finishing	161055.00	SF		0.48		0.48	$77,306	**$243,013**
								$6,010,413

Figure 10 - Structural System Estimate

GENERAL CONDITIONS ESTIMATE

With the contract arrangement being multiple prime with a CM, the general conditions costs are shared by more than one contractor. Gathering actual general conditions costs was difficult. Please find the estimate using items listed in the temporary facilities portion of the specification in figure 11. R.S. Means was utilized to gather the unit costs used in this estimate.

General Conditions Estimate
As Prepared By Brandon C. McKee

Description	Unit Price		Duration		Quan	Total
Project Management	$6,700	/Month	24	Months	1	$160,800
Site Supervisors	$6,200	/Month	24	Months	2	$297,600
Office Trailers	$554	/Month	24	Months	1	$13,296
Mobilize Trailers	$5,000	LS				$5,000
Schedule	$3,000	LS				$3,000
Project Sign	$300	/EA			2	$600
Temporary Fence	$20	/LF			2,200	$44,000
Gravel Parking Area	$9	/SY			2,500	$22,500
Temporary Toilets	$185	/EA	24	Months	6	$26,640
Site Survey	$4,000	LS				$4,000
Silt Fence	$3	LF			2,200	$6,600
Temporary Utilities						
Electric	$300	/Month	24	Months		$7,200
Water	$250	/Month	24	Months		$6,000
Telephone	$300	/Month	24	Months		$7,200
						$604,436

Project Cost per Month **$25,185** **/Month**

Figure 11 - General Conditions Estimate

The specifications also specified items to be provided for the CM by the GC.

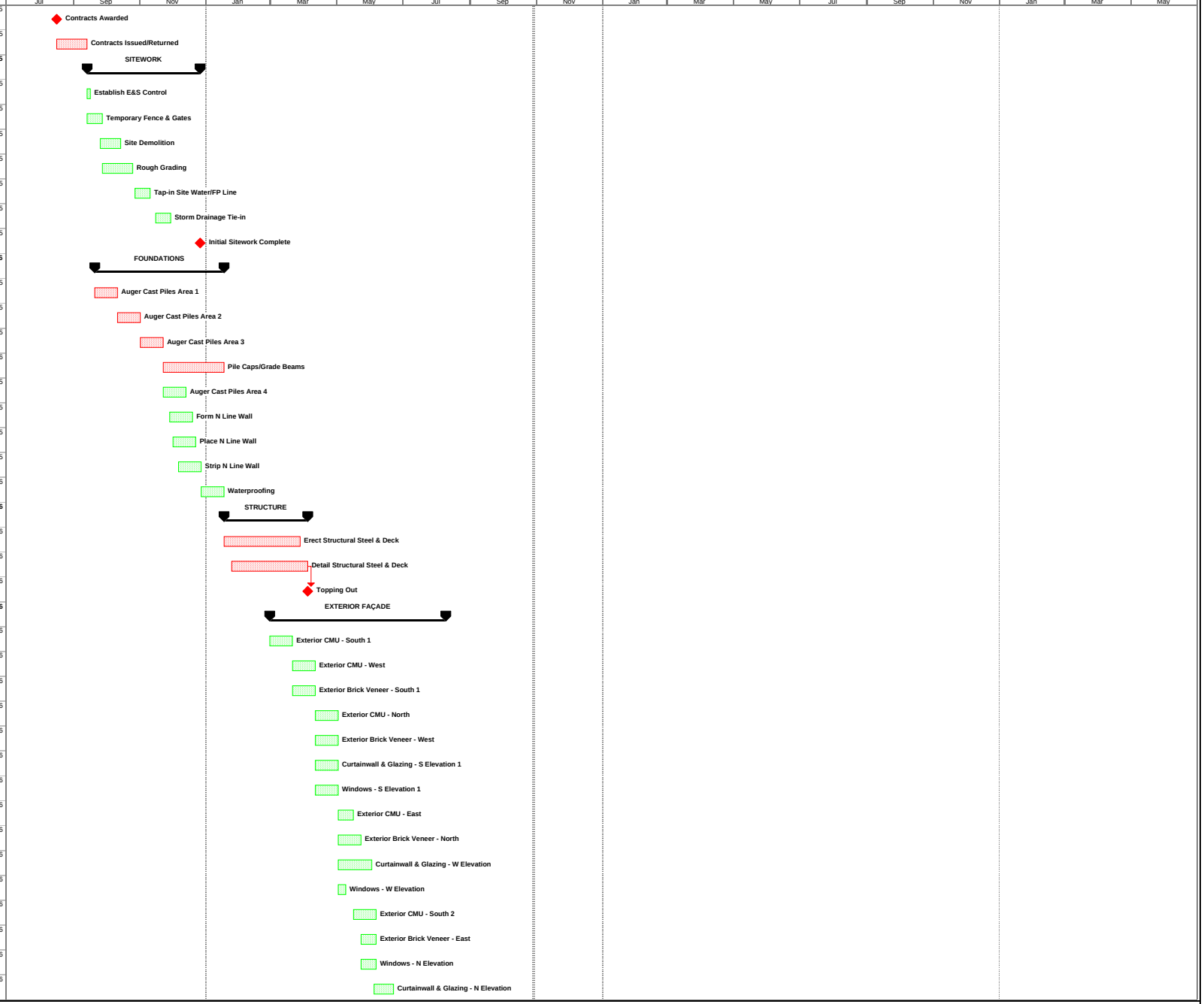
The GC will provide for the CM the following for the duration of the project.

- (3) Business telephone lines for CM
- 5.8 GHz cordless phone with answering machine and speakerphone
- Two way communication devices for CM
- Site office trailer, minimum 23.5'x60', four lockable offices, four file cabinets, minifridge, microwave, two plan racks, two plan tables, heat & AC, toilet
- Conference area with table and chairs for 30
- Trailer delivery, setup and removal
- Stairs, platforms, and railing at each door
- Trailer utilities
- Chilled water dispenser & supply
- Fire extinguisher and first aid kit
- Copy machine, service and paper
- Networkable fax machine and service
- Weekly housekeeping of trailer
- Two 4'x8' bulletin boards in weatherproof enclosure
- Project identification signage
- Traffic direction and work warning signage
- Portable toilets and servicing
- Grass and weed control
- Sediment and erosion control
- Temporary fencing and gates & removal
- Snow removal of parking areas and building accessway
- Weekly broom cleaning of entire project
- Cleanup/Prevention of mud on public roadways

APPENDIX A
DETAILED PROJECT SCHEDULE

Ambridge Area High School
Summary Schedule

ID	Task Name	Duration	Start	Finish
1	Contracts Awarded	0 days	Wed 8/17/05	Wed 8/17/05
2	Contracts Issued/Returned	20 days	Wed 8/17/05	Tue 9/13/05
3	**SITEWORK**	**74 days**	**Wed 9/14/05**	**Tue 12/27/05**
4	Establish E&S Control	3 days	Wed 9/14/05	Fri 9/16/05
5	Temporary Fence & Gates	10 days	Wed 9/14/05	Tue 9/27/05
6	Site Demolition	15 days	Mon 9/26/05	Fri 10/14/05
7	Rough Grading	20 days	Wed 9/28/05	Tue 10/25/05
8	Tap-in Site Water/FP Line	10 days	Fri 10/28/05	Thu 11/10/05
9	Storm Drainage Tie-in	10 days	Wed 11/16/05	Tue 11/29/05
10	Initial Sitework Complete	0 days	Tue 12/27/05	Tue 12/27/05
11	**FOUNDATIONS**	**85 days**	**Wed 9/21/05**	**Tue 1/17/06**
12	Auger Cast Piles Area 1	15 days	Wed 9/21/05	Tue 10/11/05
13	Auger Cast Piles Area 2	15 days	Wed 10/12/05	Tue 11/1/05
14	Auger Cast Piles Area 3	15 days	Wed 11/2/05	Tue 11/22/05
15	Pile Caps/Grade Beams	40 days	Wed 11/23/05	Tue 1/17/06
16	Auger Cast Piles Area 4	15 days	Wed 11/23/05	Tue 12/13/05
17	Form N Line Wall	15 days	Tue 11/29/05	Mon 12/19/05
18	Place N Line Wall	15 days	Fri 12/2/05	Thu 12/22/05
19	Strip N Line Wall	15 days	Wed 12/7/05	Tue 12/27/05
20	Waterproofing	15 days	Wed 12/28/05	Tue 1/17/06
21	**STRUCTURE**	**55 days**	**Wed 1/18/06**	**Tue 4/4/06**
22	Erect Structural Steel & Deck	50 days	Wed 1/18/06	Tue 3/28/06
23	Detail Structural Steel & Deck	50 days	Wed 1/25/06	Tue 4/4/06
24	Topping Out	0 days	Tue 4/4/06	Tue 4/4/06
25	**EXTERIOR FAÇADE**	**117 days**	**Wed 3/1/06**	**Wed 8/9/06**
26	Exterior CMU - South 1	15 days	Wed 3/1/06	Tue 3/21/06
27	Exterior CMU - West	15 days	Wed 3/22/06	Tue 4/11/06
28	Exterior Brick Veneer - South 1	15 days	Wed 3/22/06	Tue 4/11/06
29	Exterior CMU - North	15 days	Wed 4/12/06	Tue 5/2/06
30	Exterior Brick Veneer - West	15 days	Wed 4/12/06	Tue 5/2/06
31	Curtainwall & Glazing - S Elevation 1	15 days	Wed 4/12/06	Tue 5/2/06
32	Windows - S Elevation 1	15 days	Wed 4/12/06	Tue 5/2/06
33	Exterior CMU - East	10 days	Wed 5/3/06	Tue 5/16/06
34	Exterior Brick Veneer - North	15 days	Wed 5/3/06	Tue 5/23/06
35	Curtainwall & Glazing - W Elevation	23 days	Wed 5/3/06	Fri 6/2/06
36	Windows - W Elevation	5 days	Wed 5/3/06	Tue 5/9/06
37	Exterior CMU - South 2	15 days	Wed 5/17/06	Tue 6/6/06
38	Exterior Brick Veneer - East	10 days	Wed 5/24/06	Tue 6/6/06
39	Windows - N Elevation	10 days	Wed 5/24/06	Tue 6/6/06
40	Curtainwall & Glazing - N Elevation	15 days	Mon 6/5/06	Thu 6/22/06



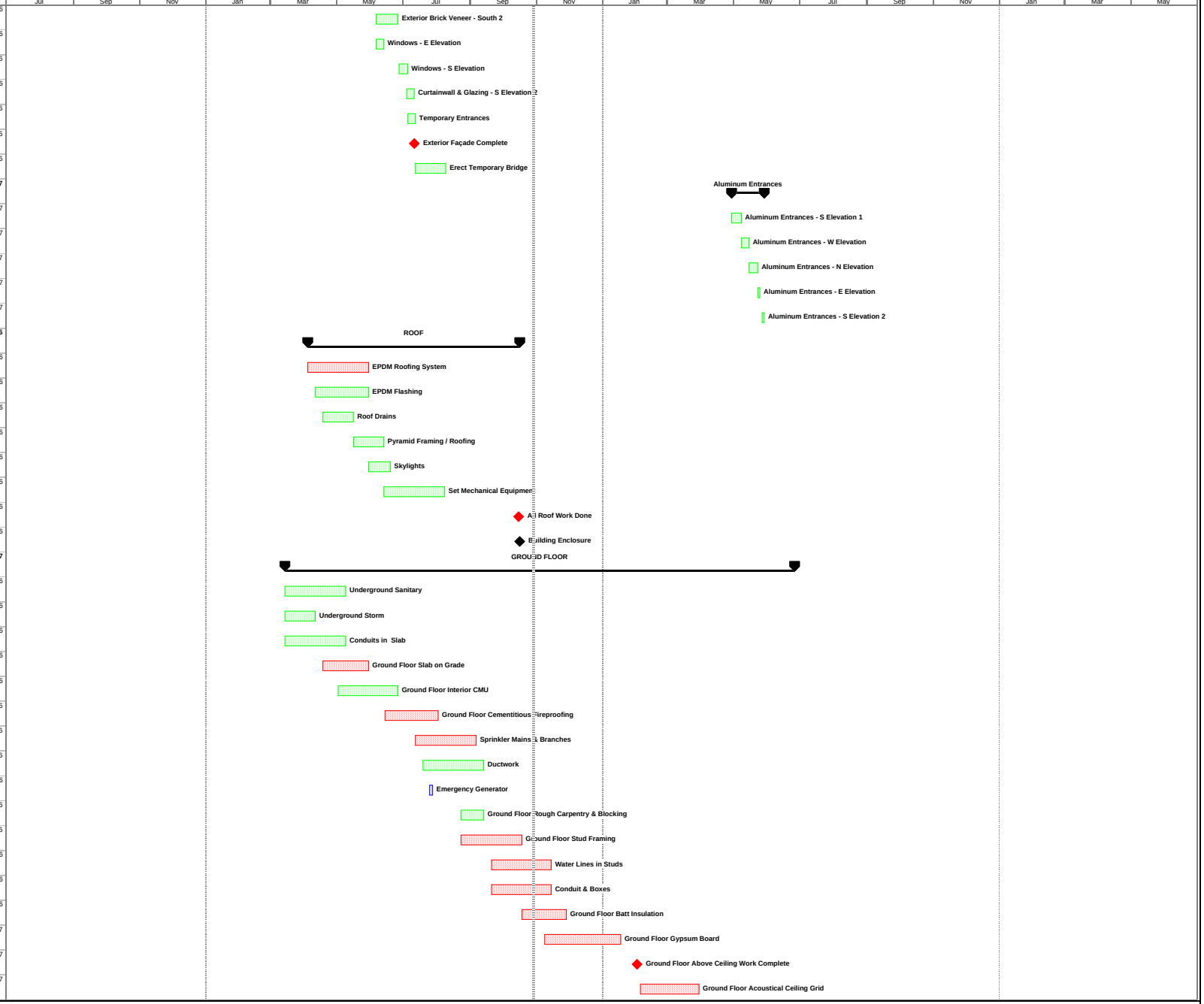
Project: Ambridge Area High School D
Date: Sun 10/29/06

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Brandon C. McKee
Construction Management

Ambridge Area High School
Summary Schedule

ID	Task Name	Duration	Start	Finish
41	Exterior Brick Veneer - South 2	15 days	Wed 6/7/06	Mon 6/26/06
42	Windows - E Elevation	5 days	Wed 6/7/06	Tue 6/13/06
43	Windows - S Elevation	6 days	Wed 6/28/06	Wed 7/5/06
44	Curtainwall & Glazing - S Elevation 2	5 days	Wed 7/5/06	Tue 7/11/06
45	Temporary Entrances	5 days	Thu 7/6/06	Wed 7/12/06
46	Exterior Façade Complete	0 days	Wed 7/12/06	Wed 7/12/06
47	Erect Temporary Bridge	20 days	Thu 7/13/06	Wed 8/9/06
48	**Aluminum Entrances**	**22 days**	**Mon 4/30/07**	**Tue 5/29/07**
49	Aluminum Entrances - S Elevation 1	7 days	Mon 4/30/07	Tue 5/8/07
50	Aluminum Entrances - W Elevation	5 days	Wed 5/9/07	Tue 5/15/07
51	Aluminum Entrances - N Elevation	6 days	Wed 5/16/07	Wed 5/23/07
52	Aluminum Entrances - E Elevation	2 days	Thu 5/24/07	Fri 5/25/07
53	Aluminum Entrances - S Elevation 2	2 days	Mon 5/28/07	Tue 5/29/07
54	**ROOF**	**140 days**	**Wed 4/5/06**	**Tue 10/17/06**
55	EPDM Roofing System	40 days	Wed 4/5/06	Tue 5/30/06
56	EPDM Flashing	35 days	Wed 4/12/06	Tue 5/30/06
57	Roof Drains	20 days	Wed 4/19/06	Tue 5/16/06
58	Pyramid Framing / Roofing	20 days	Wed 5/17/06	Tue 6/13/06
59	Skylights	15 days	Wed 5/31/06	Mon 6/19/06
60	Set Mechanical Equipment	41 days	Wed 6/14/06	Tue 8/8/06
61	All Roof Work Done	0 days	Mon 10/16/06	Mon 10/16/06
62	Building Enclosure	0 days	Tue 10/17/06	Tue 10/17/06
63	**GROUND FLOOR**	**337 days?**	**Wed 3/15/06**	**Wed 6/27/07**
64	Underground Sanitary	40 days	Wed 3/15/06	Tue 5/9/06
65	Underground Storm	20 days	Wed 3/15/06	Tue 4/11/06
66	Conduits in Slab	40 days	Wed 3/15/06	Tue 5/9/06
67	Ground Floor Slab on Grade	30 days	Wed 4/19/06	Tue 5/30/06
68	Ground Floor Interior CMU	40 days	Wed 5/3/06	Mon 6/26/06
69	Ground Floor Cementitious Fireproofing	36 days	Thu 6/15/06	Wed 8/2/06
70	Sprinkler Mains & Branches	40 days?	Thu 7/13/06	Wed 9/6/06
71	Ductwork	40 days?	Thu 7/20/06	Wed 9/13/06
72	Emergency Generator	3 days	Wed 7/26/06	Fri 7/28/06
73	Ground Floor Rough Carpentry & Blocking	15 days	Thu 8/24/06	Wed 9/13/06
74	Ground Floor Stud Framing	40 days	Thu 8/24/06	Wed 10/18/06
75	Water Lines in Studs	40 days	Thu 9/21/06	Tue 11/14/06
76	Conduit & Boxes	40 days	Thu 9/21/06	Tue 11/14/06
77	Ground Floor Batt Insulation	30 days	Thu 10/19/06	Tue 11/28/06
78	Ground Floor Gypsum Board	50 days	Thu 11/9/06	Wed 1/17/07
79	Ground Floor Above Ceiling Work Complete	0 days	Fri 2/2/07	Fri 2/2/07
80	Ground Floor Acoustical Ceiling Grid	40 days	Mon 2/5/07	Fri 3/30/07



Project: Ambridge Area High School D
Date: Sun 10/29/06

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Brandon C. McKee
Construction Management

Ambridge Area High School
Summary Schedule

ID	Task Name	Duration	Start	Finish
81	Ground Floor Corridor Ceramic Tile	25 days	Mon 3/19/07	Fri 4/20/07
82	Ground Floor Resilient Tile & Base	30 days	Mon 4/2/07	Fri 5/11/07
83	Ground Floor Finish Paint	20 days	Mon 4/23/07	Fri 5/18/07
84	Acoustical Ceiling Tile	10 days	Mon 5/14/07	Fri 5/25/07
85	Ground Floor Complete	0 days	Wed 6/27/07	Wed 6/27/07
86	**FIRST FLOOR**	**319 days**	**Wed 4/12/06**	**Fri 6/29/07**
87	Underground/ In Slab Sanitary	20 days	Wed 4/12/06	Tue 5/9/06
88	Underground/ In Slab Storm	10 days	Wed 4/12/06	Tue 4/25/06
89	Conduits in Slab	20 days	Wed 4/12/06	Tue 5/9/06
90	1st Floor Slab on Deck	10 days	Wed 5/31/06	Tue 6/13/06
91	1st Floor Slab on Grade	20 days	Wed 5/31/06	Mon 6/26/06
92	1st Floor Interior CMU	20 days	Wed 6/14/06	Mon 7/10/06
93	1st Floor Cementitious Fireproofing	40 days	Thu 7/13/06	Wed 9/6/06
94	Sprinkler Mains & Branches	40 days	Thu 8/10/06	Wed 10/4/06
95	Ductwork	40 days	Thu 8/17/06	Wed 10/11/06
96	1st Floor Stud Framing	50 days	Thu 9/21/06	Tue 11/28/06
97	Water Lines in Studs	40 days	Thu 10/19/06	Tue 12/12/06
98	Conduit & Boxes	40 days	Thu 10/19/06	Tue 12/12/06
99	1st Floor Batt Insulation	40 days	Thu 11/16/06	Wed 1/10/07
100	1st Floor Gypsum Board	60 days	Thu 11/23/06	Wed 2/14/07
101	Interior Brick - Lobby	10 days	Mon 1/22/07	Fri 2/2/07
102	Interior Brick - Auditorium	10 days	Mon 2/5/07	Fri 2/16/07
103	Quarry Tile - Kitchen	15 days	Mon 2/5/07	Fri 2/23/07
104	1st Floor Above Ceiling Work Complete	0 days	Fri 2/16/07	Fri 2/16/07
105	1st Floor Acoustical Ceiling Grid	40 days	Mon 3/5/07	Fri 4/27/07
106	Stage Equipment	25 days	Mon 3/26/07	Fri 4/27/07
107	Kitchen Equipment	15 days	Mon 4/2/07	Fri 4/20/07
108	Wood Floor System - Gym	25 days	Mon 4/9/07	Fri 5/11/07
109	1st Floor Corridor Ceramic Tile	25 days	Mon 4/16/07	Fri 5/18/07
110	1st Floor Resilient Tile & Base	30 days	Mon 4/30/07	Fri 6/8/07
111	Auditorium Seats	15 days	Mon 5/7/07	Fri 5/25/07
112	Finish Carpentry	15 days	Mon 5/21/07	Fri 6/8/07
113	Gymnasium Bleachers	15 days	Wed 5/23/07	Tue 6/12/07
114	1st Floor Finish Paint	20 days	Mon 5/21/07	Fri 6/15/07
115	1st Floor Complete	0 days	Fri 6/29/07	Fri 6/29/07
116	**SECOND FLOOR**	**332 days**	**Wed 5/10/06**	**Tue 8/14/07**
117	In Slab Sanitary	20 days	Wed 5/10/06	Tue 6/6/06
118	Conduits in Slab	20 days	Wed 6/28/06	Tue 7/25/06
119	2ND Floor Slab on Deck	30 days	Wed 6/14/06	Mon 7/24/06
120	2nd Floor Interior CMU	21 days	Wed 6/28/06	Wed 7/26/06

Project: Ambridge Area High School D
Date: Sun 10/29/06

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Brandon C. McKee
Construction Management

Ambridge Area High School
Summary Schedule

ID	Task Name	Duration	Start	Finish
121	2nd Floor Cementitious Fireproofing	40 days	Thu 8/10/06	Wed 10/4/06
122	Sprinkler Mains & Branches	40 days	Thu 9/7/06	Tue 10/31/06
123	Ductwork	40 days	Thu 9/14/06	Tue 11/7/06
124	Rough Carpentry & Blocking	15 days	Thu 10/19/06	Tue 11/7/06
125	2nd Floor Stud Framing	50 days	Thu 10/19/06	Tue 12/26/06
126	Conduits & Boxes in Studs	40 days	Thu 11/16/06	Wed 1/10/07
127	2nd Floor Batt Insulation	40 days	Thu 12/14/06	Wed 2/7/07
128	2nd Floor Gypsum Board	60 days	Thu 12/21/06	Wed 3/14/07
129	2nd Floor Above Ceiling Work Complete	0 days	Fri 3/30/07	Fri 3/30/07
130	2nd Floor Acoustical Ceiling Grid	40 days	Mon 4/2/07	Fri 5/25/07
131	2nd Floor Corridor Ceramic Tile	25 days	Mon 5/14/07	Fri 6/15/07
132	2nd Floor Resilient Tile & Base	30 days	Mon 5/28/07	Fri 7/6/07
133	Finish Carpentry	15 days	Wed 7/18/07	Tue 8/7/07
134	2nd Floor Finish Paint	20 days	Wed 7/18/07	Tue 8/14/07
135	2nd Floor Complete	0 days	Mon 7/30/07	Mon 7/30/07
136	**ELEVATORS & STAIRS**	**321 days**	**Wed 5/31/06**	**Mon 8/20/07**
137	Install Elevator 1P Pit/Cylinder	5 days	Wed 5/31/06	Tue 6/6/06
138	Install Elevator 2P Pit/Cylinder	5 days	Wed 6/7/06	Tue 6/13/06
139	Install Elevator 3F Pit/Cylinder	5 days	Wed 6/14/06	Mon 6/19/06
140	Install Elevator 1 & Equipment	10 days	Thu 7/27/06	Wed 8/9/06
141	Install Elevator 2 & Equipment	10 days	Thu 8/10/06	Wed 8/23/06
142	Install Elevator 3 & Equipment	10 days	Thu 8/24/06	Wed 9/6/06
143	Start Up Elevators	0 days	Wed 9/27/06	Wed 9/27/06
144	Erect Metal Stairs	15 days	Thu 7/27/06	Wed 8/16/06
145	Pour Metal Stairs	10 days	Thu 8/17/06	Wed 8/30/06
146	Tile, Base & Rubber Treads	30 days	Tue 7/10/07	Mon 8/20/07
147	**FINAL SITEWORK**	**101 days**	**Mon 4/2/07**	**Mon 8/20/07**
148	Final Grading	10 days	Mon 4/2/07	Fri 4/13/07
149	Grading for Pavement	10 days	Mon 4/16/07	Fri 4/27/07
150	Asphalt Binder Course	10 days	Mon 5/21/07	Fri 6/1/07
151	Asplalt Wearing Course	10 days	Mon 6/4/07	Fri 6/15/07
152	Site Fence	15 days	Tue 7/10/07	Mon 7/30/07
153	Seeding and Landscaping	15 days	Tue 7/31/07	Mon 8/20/07
154	**PROJECT SUBSTANTIAL COMPLETION**	**97 days?**	**Thu 8/23/07**	**Mon 1/7/08**
155	Project Substantially Complete	0 days	Thu 8/23/07	Thu 8/23/07
156	Owner Moves F,F & E from Existing Building	85 days?	Mon 9/10/07	Fri 1/4/08
157	Students Return to School	0 days	Mon 1/7/08	Mon 1/7/08

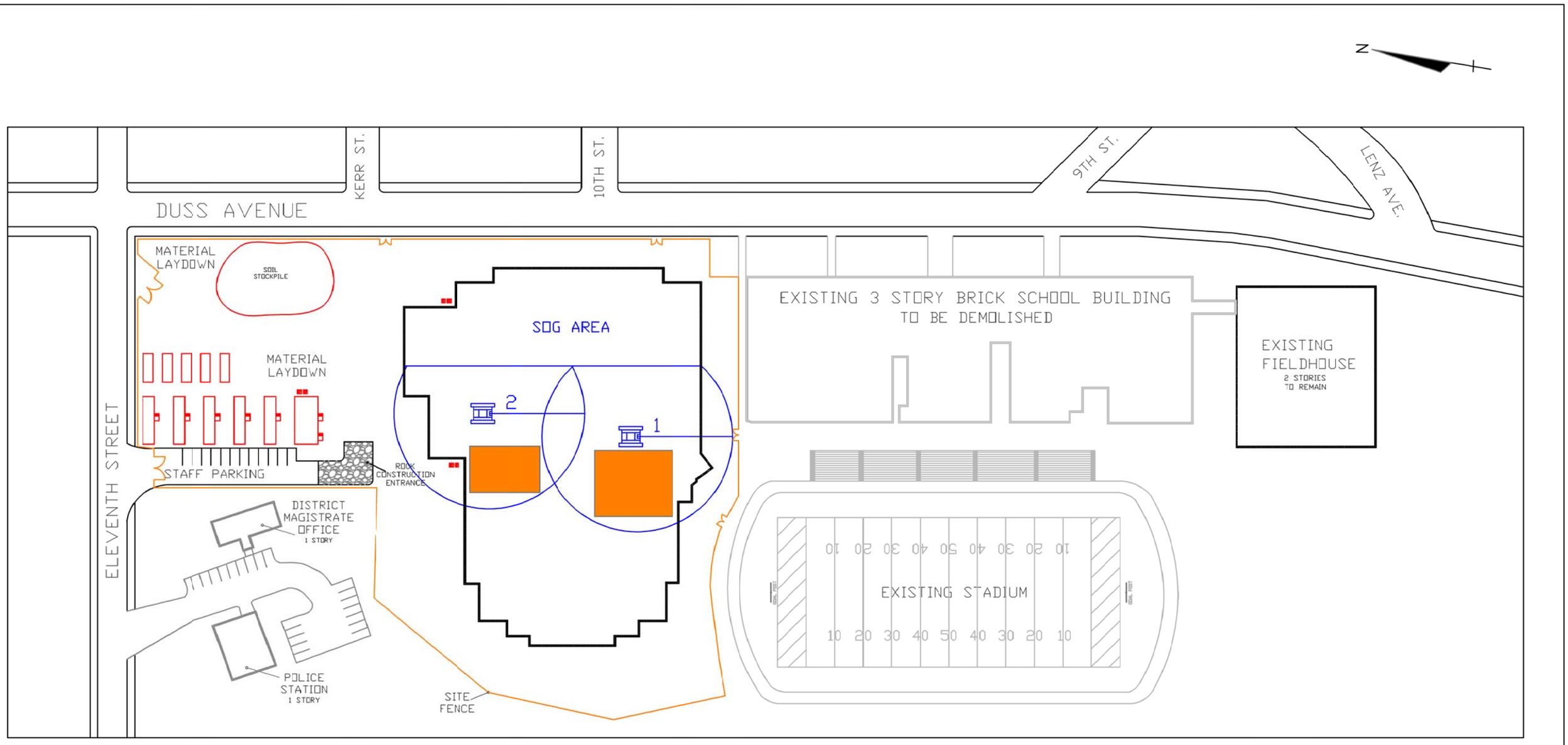
Project: Ambridge Area High School D
Date: Sun 10/29/06

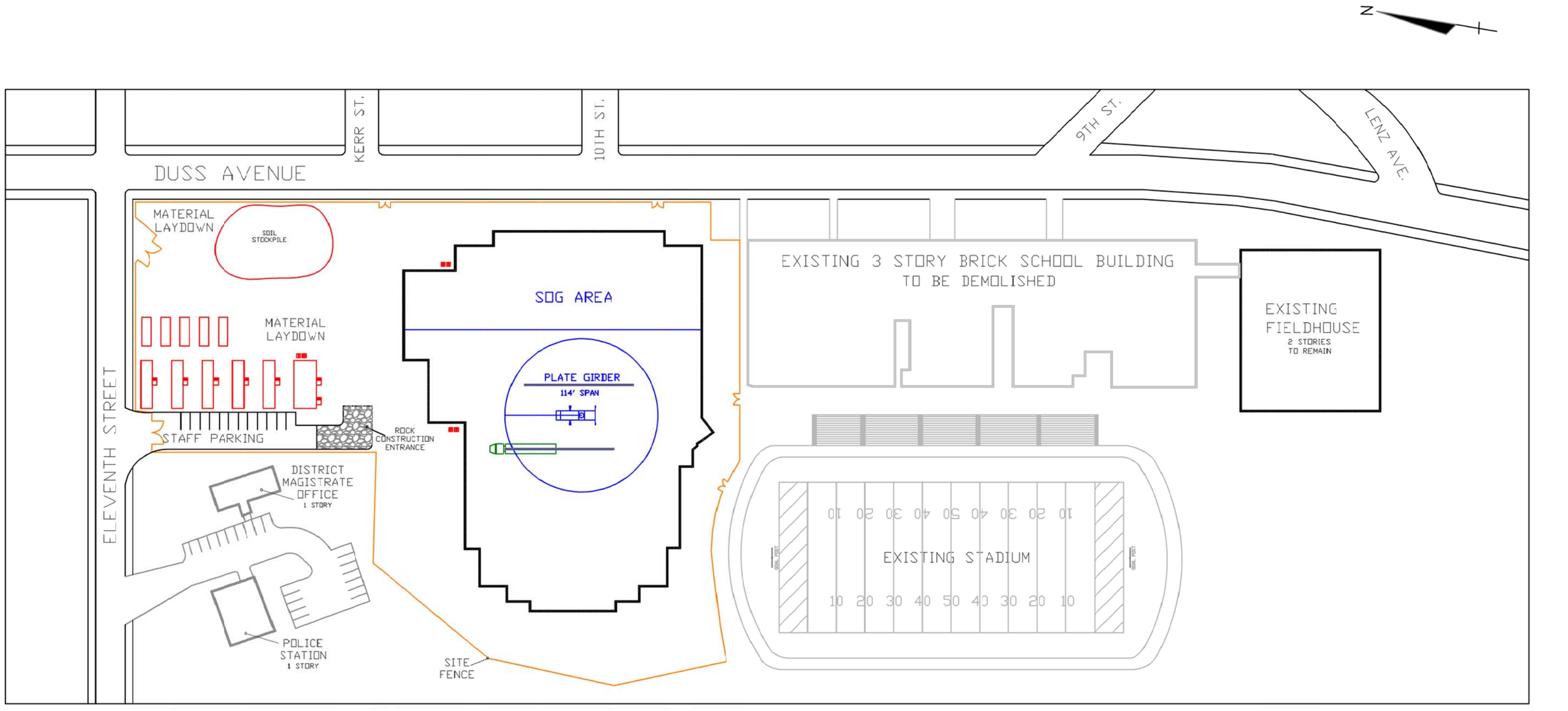
Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

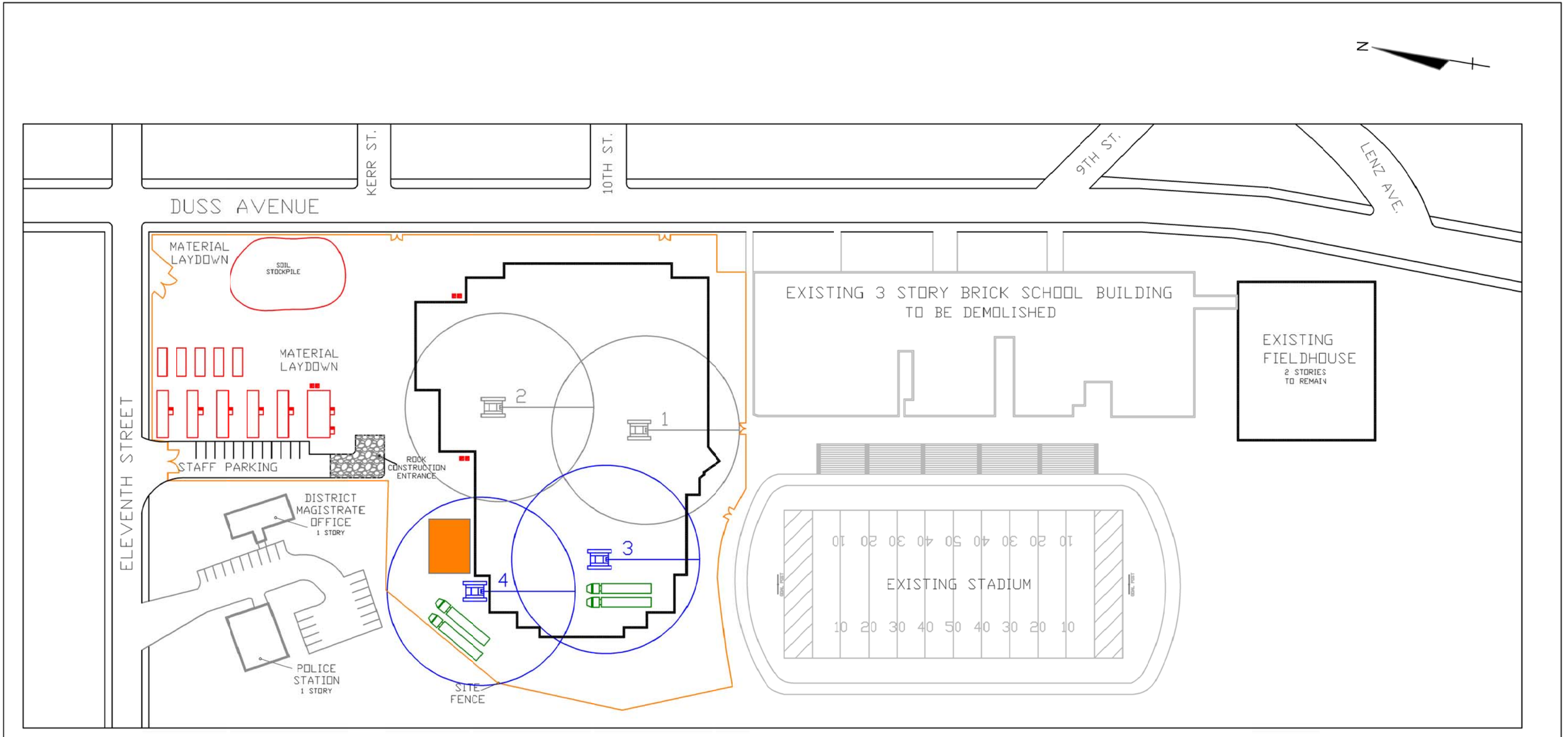
Brandon C. McKee
Construction Management

A4

APPENDIX B
DETAILED SITE LAYOUT PLANNING


N
DUSS AVENUE
KERR ST.
10TH ST.
9TH ST.
LENZ AVE.
ELEVENTH STREET
MATERIAL LAYDOWN
SOIL STOCKPILE
MATERIAL LAYDOWN
SOG AREA
2
1
EXISTING 3 STORY BRICK SCHOOL BUILDING TO BE DEMOLISHED
EXISTING FIELDHOUSE
2 STORIES TO REMAIN
STAFF PARKING
ROCK CONSTRUCTION ENTRANCE
DISTRICT MAGISTRATE OFFICE
1 STORY
POLICE STATION
1 STORY
SITE FENCE
EXISTING STADIUM
10 20 30 40 50 40 30 20 10
50' 25' 0 50' 100'
PLAN SCALE 1" = 100'
TEMPORARY RESTROOMS
1ST FLOOR SLAB ON GRADE
165T CRAWLER CRANE
200T MOBILE CRANE
CONCRETE PUMP
STEEL DELIVERY
STEEL STAGING
DRAWN BY
BRANDON McKEE
PROJECT
AMBRIDGE AREA HIGH SCHOOL
AMBRIDGE
PENNSYLVANIA
DRAWING #
S-101
STEEL PHASE


N
DUSS AVENUE
KERR ST.
10TH ST.
9TH ST.
LENZ AVE.
ELEVENTH STREET
MATERIAL LAYDOWN
SOIL STOCKPILE
MATERIAL LAYDOWN
STAFF PARKING
ROCK CONSTRUCTION ENTRANCE
DISTRICT MAGISTRATE OFFICE
1 STORY
POLICE STATION
1 STORY
SITE FENCE
SOG AREA
PLATE GIRDER
114' SPAN
EXISTING 3 STORY BRICK SCHOOL BUILDING
TO BE DEMOLISHED
EXISTING FIELDHOUSE
2 STORIES
TO REMAIN
EXISTING STADIUM
10 20 30 40 50 40 30 20 10
50' 25' 0 50' 100'
PLAN SCALE 1" = 100'
TEMPORARY RESTROOMS
1ST FLOOR SLAB ON GRADE
165T CRAWLER CRANE
200T MOBILE CRANE
CONCRETE PUMP
STEEL DELIVERY
STEEL STAGING
DRAWN BY
BRANDON McKEE
PROJECT
AMBRIDGE AREA HIGH SCHOOL
AMBRIDGE
PENNSYLVANIA
DRAWING #
S-102
PLATE GIRDER


N
DUSS AVENUE
KERR ST.
10TH ST.
9TH ST.
LENZ AVE.
ELEVENTH STREET
MATERIAL LAYDOWN
SOIL STOCKPILE
MATERIAL LAYDOWN
STAFF PARKING
ROCK CONSTRUCTION ENTRANCE
DISTRICT MAGISTRATE OFFICE
1 STORY
POLICE STATION
1 STORY
SITE FENCE
EXISTING 3 STORY BRICK SCHOOL BUILDING
TO BE DEMOLISHED
EXISTING FIELDHOUSE
2 STORIES
TO REMAIN
EXISTING STADIUM
1
2
3
4
TEMPORARY RESTROOMS
1ST FLOOR SLAB ON GRADE
165T CRAWLER CRANE
200T MOBILE CRANE
CONCRETE PUMP
STEEL DELIVERY
STEEL STAGING
50' 25' 0 50' 100'
PLAN SCALE 1" = 100'
DRAWN BY
BRANDON McKEE
PROJECT
AMBRIDGE AREA HIGH SCHOOL
AMBRIDGE
PENNSYLVANIA
DRAWING #
S-103
STEEL PHASE 2

N

DUSS AVENUE

KERR ST.

10TH ST.

9TH ST.

LENZ AVE.

ELEVENTH STREET

MATERIAL LAYDOWN

SOIL STOCKPILE

MATERIAL LAYDOWN

STAFF PARKING

ROCK CONSTRUCTION ENTRANCE

DISTRICT MAGISTRATE OFFICE
1 STORY

POLICE STATION
1 STORY

SITE FENCE

1

2

3

4

5

6

7

EXISTING 3 STORY BRICK SCHOOL BUILDING
TO BE DEMOLISHED

EXISTING FIELDHOUSE
2 STORIES
TO REMAIN

EXISTING STADIUM

10 20 30 40 50 40 30 20 10

R TEMPORARY RESTROOMS

1ST FLOOR SLAB ON GRADE

165T CRAWLER CRANE

200T MOBILE CRANE

CONCRETE PUMP

STEEL DELIVERY

STEEL STAGING

50′ 25′ 0 50′ 100′

PLAN SCALE 1" = 100′

DRAWN BY
BRANDON McKEE

PROJECT
AMBRIDGE AREA HIGH SCHOOL
AMBRIDGE
PENNSYLVANIA

DRAWING #
S-104
STEEL PHASE 3

N

DUSS AVENUE

KERR ST.

10TH ST.

9TH ST.

LENZ AVE.

FLFVFNTH STRFFT

MATERIAL LAYDOWN

SOIL STOCKPILE

1ST FLOOR SLAB ON GRADE

CONCRETE PUMP LOCATION 1

CONCRETE PUMP LOCATION 2

MATERIAL LAYDOWN

STAFF PARKING

ROCK CONSTRUCTION ENTRANCE

DISTRICT MAGISTRATE OFFICE
1 STORY

CONCRETE PUMP LOCATION 3

POLICE STATION
1 STORY

SITE FENCE

EXISTING 3 STORY BRICK SCHOOL BUILDING
TO BE DEMOLISHED

EXISTING FIELDHOUSE
2 STORIES
TO REMAIN

EXISTING STADIUM

10 20 30 40 50 40 30 20 10

50' 25' 0 50' 100'
PLAN SCALE 1" = 100'

- TEMPORARY RESTROOMS
- 1ST FLOOR SLAB ON GRADE
- 165T CRAWLER CRANE
- 200T MOBILE CRANE
- CONCRETE PUMP
- STEEL DELIVERY
- STEEL STAGING

DRAWN BY
BRANDON McKEE

PROJECT
AMBRIDGE AREA HIGH SCHOOL
AMBRIDGE
PENNSYLVANIA

DRAWING #
S-105
ELEVATED SLABS

APPENDIX C
ASSEMBLIES ESTIMATE NOTES

AAHS Exterior Facade Estimate								
As Prepared by Brandon C. McKee								
Drawing # A202 & A301								
Total Façade Area = 10,625 SF - 322' - 6" LF								
			Cost per Unit			Total	Category	Cost/
Description	Qty.	Unit	Mat.	Inst.	Total	Cost	Total	SF
FAÇADE								
Face Brick	7754	SF	$2.17	$2.39	$4.56	$35,358		
Soilder Course	432.00	LF	$2.05	$2.35	$4.40	$1,901		
2 " Insulation Board	7754.00	SF	$1.29	$0.34	$1.63	$12,639		
CMU Backup	7754.00	SF	$1.96	$3.77	$5.73	$44,430		
Contraction Joint	816.00	LF	$7.45	$1.45	$8.90	$7,262		
Precast Window Sills	231.00	LF	$10.80	$10.60	$21.40	$4,943		
Precast Emblems	3	EA	$500.00	$425.00	$925.00	$2,775		
Precast Water Table Band	187.50	LF	$19.50	$3.56	$23.06	$4,324		
Painted Mineral Fiber Siding	252.00	SF	$0.93	$1.31	$2.24	$564		
Window W1	24	EA	$299.00	$138.00	$437.00	$10,488		
Window W2	16	EA	$299.00	$138.00	$437.00	$6,992		
Window W3	2	EA	$299.00	$138.00	$437.00	$874		
Curtain wall C8	492	SF	$18.60	$14.60	$33.20	$16,334		
Curtain wall C9	200	SF	$18.60	$14.60	$33.20	$6,640		
Aluminum Entrance Doors	2	EA	$1,875.00	$1,300.00	$3,175.00	$6,350		
Aluminum Metal Trim	322.50	LF	$1.62	$2.46	$4.08	$1,316		
							$163,192	**$15.36**

APPENDIX D
DETAILED STRUCTURAL SYSTEMS ESTIMATE NOTES

AAHS Structural System Estimate
As Prepared by Brandon C. McKee

Description	Qty.	Unit	Cost per Unit Mat.	Inst.	Equip.	Total	Total Cost	Category Total
FOUNDATIONS								
Auger Cast Piles	821	EA	575.00	315.00		890.00	$730,690	
Reinforcing	82.10	Ton	760.00	580.00		1,340.00	$110,014	
								$840,704
Grade Beams	256.41	CY	226.00	45.00	0.29	271.29	$69,561	
Formwork	9501.89	SF	0.63	2.67		3.30	$31,356	
Reinforcing	22.11	Ton	800.00	760.00		1,560.00	$34,492	
								$135,409
Pile Caps	1567.44	CY	108.00	49.00		157.00	$246,089	
Formwork	19404.00	SF	0.63	2.67		3.30	$64,033	
Reinforcing	46.34	Ton	800.00	760.00		1,560.00	$72,290	
								$382,412
								$1,358,525
SUPERSTRUCTURE								
Structural Steel Framing								
Structural Steel Beams	545.89	Ton	2,558.00	360.00	169.00	3,087.00	$1,685,169	
Plate Girder	23	Ton	2,558.00	260.00	169.00	2,987.00	$68,221	
Structural Steel Roof Framing	210	Ton	2,558.00	260.00	169.00	2,987.00	$626,477	
								$2,379,867
Roof Joists	79	Ton	1,200.00	177.00	87.50	1,464.50	$115,828	
								$115,828
Metal Floor Deck	161055	SF	1.14	0.25	0.02	1.41	$227,088	
								$227,088
Roof Deck								
Metal Roof Deck	77410	SF	1.14	0.25	0.02	1.41	$109,148	
Acoustical Roof Deck	24275	SF	1.31	0.29	0.02	1.62	$39,362	
								$148,510
Concrete Slab on Grade								
Formwork	643.5	SF	2.10	2.96		5.06	$3,256	
Concrete	1079.72	CY	84.00	14.15	5.80	103.95	$112,237	
Reinforcing	906.45	CSF		25.50		25.50	$23,114	
Finishing	84270.00	SF		0.48		0.48	$40,450	
								$179,057
Concrete Slab on Deck								
Formwork	891.00	SF	2.10	2.96		5.06	$4,508	
Concrete	1247.06	CY	84.00	14.15	5.80	103.95	$129,632	
Reinforcing	1610.55	CSF		19.60		19.60	$31,567	
Finishing	161055.00	SF		0.48		0.48	$77,306	**$243,013**
								$6,010,413

Structual Beams Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	730	Ea
Total Weight =	**545.89**	**Tons**
Heaviest Piece =	3,822	Lbs

Drwg No.	Location	Description	Beams	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S111	A	Girder	W 8 x 10	10	12.5	10	1250
S111	A	Girder	W 14 x 22	22	12.5	1	275
S111	A	Girder	W 12 x 14	14	14	11	2156
S111	A	Girder	W 14 x 22	22	27.5	11	6655
S111	A	Girder	W 16 x 26	26	27.5	20	14300
S111	A	Girder	W 16 x 31	31	27.5	1	852.5
S111	A	Girder	W 16 x 31	31	29.5	20	18290
S111	A	Girder	W 16 x 36	36	27.5	1	990
S111	A	Girder	W 18 x 40	40	27.5	1	1100
S111	A	Girder	W 18 x 40	40	41.5	1	1660
S111	A	Girder	W 18 x 46	46	29.5	2	2714
S111	A	Girder	W 21 x 50	50	41.5	12	24900
S111	A	Beam	W 18 x 40	40	28.5	1	1140
S111	A	Beam	W 24 x 55	55	28.5	1	1567.5
S111	A	Beam	W 24 x 62	62	28.5	2	3534
S111	A	Beam	W 24 x 68	68	28.5	2	3876
S111	A	Beam	W 24 x 76	76	28.5	1	2166
S111	A	Beam	W 18 x 35	35	29.5	1	1032.5
S111	A	Beam	W 21 x 50	50	29.5	1	1475
S111	A	Beam	W 24 x 55	55	29.5	2	3245
S111	A	Beam	W 24 x 62	62	29.5	1	1829
S111	A	Beam	W 24 x 68	68	29.5	1	2006
S111	A	Beam	W 24 x 76	76	29.5	2	4484
S111	A	Shaft Framing	W 12 x 14	14	7	5	490
S111	A	Shaft Framing	W 12 x 16	16	18.5	2	592
S112	B	Girder	W 8 x 10	10	6.5	23	1495
S112	B	Girder	W 8 x 10	10	12.5	63	7875
S112	B	Girder	W 12 x 14	14	12.5	8	1400
S112	B	Girder	W 12 x 14	14	14	17	3332
S112	B	Girder	W 12 x 14	14	14.5	22	4466
S112	B	Girder	W 12 x 14	14	15	25	5250
S112	B	Girder	W 12 x 14	14	16	4	896
S112	B	Girder	W 14 x 22	22	6.5	2	286
S112	B	Girder	W 14 x 22	22	12.5	4	1100
S112	B	Girder	W 14 x 22	22	14.5	2	638
S112	B	Girder	W 16 x 26	26	28.5	19	14079
S112	B	Girder	W 16 x 31	31	16	2	992
S112	B	Girder	W 16 x 31	31	27	6	5022
S112	B	Girder	W 16 x 40	40	27	2	2160
S112	B	Girder	W 16 x 40	40	29.5	2	2360
S112	B	Girder	W 18 x 35	35	27	2	1890
S112	B	Girder	W 18 x 35	35	29.5	12	12390
S112	B	Girder	W 18 x 40	40	38	2	3040
S112	B	Girder	W 21 x 44	44	42	4	7392
S112	B	Girder	W 21 x 48	48	42	7	14112
S112	B	Girder	W 21 x 50	50	38	23	43700
S112	B	Girder	W 21 x 50	50	28.5	1	1425
S112	B	Girder	W 24 x 62	62	15	1	930
S112	B	Girder	W 24 x 68	68	42	1	2856
S112	B	Girder	W 24 x 68	68	15	1	1020
S112	B	Beam	W 12 x 14	14	12.5	1	175
S112	B	Beam	W 12 x 16	16	12.5	1	200
S112	B	Beam	W 12 x 19	19	12.5	1	237.5
S112	B	Beam	W 16 x 31	31	28.5	2	1767
S112	B	Beam	W 18 x 35	35	23.5	1	822.5

Structual Beams Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	730	Ea
Total Weight =	**545.89**	**Tons**
Heaviest Piece =	3,822	Lbs

Drwg No.	Location	Description	Beams	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S112	B	Beam	W 18 x 35	35	28.5	3	2992.5
S112	B	Beam	W 18 x 40	40	28.5	1	1140
S112	B	Beam	W 21 x 44	44	28.5	4	5016
S112	B	Beam	W 24 x 55	55	23.5	1	1292.5
S112	B	Beam	W 24 x 55	55	28.5	6	9405
S112	B	Beam	W 24 x 62	62	28.5	2	3534
S112	B	Beam	W 24 x 68	68	33.5	1	2278
S112	B	Beam	W 24 x 68	68	36.5	1	2482
S112	B	Beam	W 24 x 76	76	33.5	1	2546
S112	B	Beam	W 27 x 84	84	33.5	2	5628
S112	B	Beam	W 30 x 90	90	33.5	1	3015
S112	B	Audit Girder	W 8 x 10	10	5	18	900
S112	B	Audit Girder	W 8 x 10	10	7.5	26	1950
S112	B	Audit Girder	W 8 x 10	10	10	7	700
S112	B	Audit Girder	W 12 x 14	14	6.5	8	728
S112	B	Audit Girder	W 12 x 14	14	7.5	6	630
S112	B	Audit Girder	W 12 x 14	14	8	2	224
S112	B	Audit Girder	W 12 x 14	14	9	2	252
S112	B	Audit Girder	W 12 x 14	14	9.5	14	1862
S112	B	Audit Girder	W 12 x 14	14	11.5	2	322
S112	B	Audit Girder	W 12 x 14	14	13	2	364
S112	B	Audit Girder	W 12 x 14	14	15	20	4200
S112	B	Audit Girder	W 12 x 14	14	16.5	4	924
S112	B	Audit Girder	W 12 x 14	14	22	2	616
S112	B	Audit Girder	W 12 x 16	16	17	8	2176
S112	B	Audit Girder	W 12 x 19	19	26.5	8	4028
S112	B	Audit Girder	W 14 x 22	22	12.5	2	550
S112	B	Audit Girder	W 14 x 22	22	14.5	2	638
S112	B	Audit Girder	W 14 x 22	22	24	21	11088
S112	B	Audit Girder	W 14 x 22	22	33	2	1452
S112	B	Audit Girder	W 16 x 26	26	24	2	1248
S112	B	Audit Girder	W 18 x 35	35	33	2	2310
S112	B	Audit Beam	W 16 x 26	26	28.5	4	2964
S112	B	Audit Beam	W 12 x 14	14	12	8	1344
S112	B	Audit Beam	W 14 x 22	22	8	12	2112
S112	B	Audit Beam	W 14 x 22	22	22.5	3	1485
S112	B	Audit Beam	W 16 x 26	26	25.5	2	1326
S112	B	Audit Beam	W 16 x 31	31	25.5	2	1581
S112	B	Audit Beam	W 16 x 31	31	28.5	2	1767
S112	B	Audit Beam	W 16 x 45	45	31.5	1	1417.5
S112	B	Audit Beam	W 18 x 35	35	31.5	1	1102.5
S112	B	Audit Beam	W 18 x 40	40	25	1	1000
S112	B	Audit Beam	W 18 x 40	40	28.5	2	2280
S112	B	Audit Beam	W 18 x 40	40	31.5	1	1260
S112	B	Audit Beam	W 24 x 55	55	25.5	4	5610
S112	B	Audit Beam	W 24 x 55	55	34.5	1	1897.5
S112	B	Audit Beam	W 24 x 55	55	40	2	4400
S112	B	Audit Beam	W 24 x 68	68	28.5	4	7752
S112	B	Stair Framing	W 14 x 22	22	15	4	1320
S113	C	Girder	W 12 x 14	14	14.6	15	3066
S113	C	Girder	W 14 x 22	22	14.5	4	1276
S113	C	Girder	W 16 x 26	26	25	14	9100
S113	C	Girder	W 16 x 31	31	25	4	3100
S113	C	Girder	W 16 x 31	31	29.5	30	27435

Structual Beams Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	730	Ea
Total Weight =	**545.89**	**Tons**
Heaviest Piece =	3,822	Lbs

Drwg No.	Location	Description	Beams	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S113	C	Girder	W 18 x 40	40	29.5	3	3540
S113	C	Girder	W 21 x 44	44	29.5	2	2596
S113	C	Girder	W 21 x 50	50	29.5	1	1475
S113	C	Girder	W 24 x 55	55	45.5	18	45045
S113	C	Girder	W 24 x 94	94	45.5	1	4277
S113	C	Beam	W 12 x 14	14	9.5	2	266
S113	C	Beam	W 12 x 14	14	12.5	1	175
S113	C	Beam	W 12 x 16	16	12.5	2	400
S113	C	Beam	W 12 x 19	19	12.5	2	475
S113	C	Beam	W 14 x 22	22	15.5	2	682
S113	C	Beam	W 18 x 35	35	15.5	2	1085
S113	C	Beam	W 18 x 35	35	27.5	2	1925
S113	C	Beam	W 21 x 50	50	27.5	2	2750
S113	C	Beam	W 24 x 62	62	25	2	3100
S113	C	Beam	W 24 x 62	62	27.5	4	6820
S113	C	Beam	W 24 x 55	55	25.5	4	5610
S113	C	Beam	W 24 x 68	68	25.5	4	6936
S113	C	Stair Framing	W 14 x 22	22	15	6	1980
S114	D	Girder	W 8 x 10	10	13	10	1300
S114	D	Girder	W 12 x 14	14	5.5	2	154
S114	D	Girder	W 12 x 14	14	7	2	196
S114	D	Girder	W 12 x 14	14	13	7	1274
S114	D	Girder	W 12 x 16	16	18.5	1	296
S114	D	Girder	W 14 x 22	22	13	2	572
S114	D	Girder	W 14 x 22	22	21.5	1	473
S114	D	Girder	W 16 x 26	26	27	13	9126
S114	D	Girder	W 16 x 31	31	27	39	32643
S114	D	Girder	W 16 x 40	40	27	2	2160
S114	D	Girder	W 16 x 40	40	29.5	1	1180
S114	D	Girder	W 18 x 35	35	29.5	5	5162.5
S114	D	Girder	W 18 x 40	40	27	4	4320
S114	D	Girder	W 24 x 68	68	29.5	1	2006
S114	D	Beam	W 18 x 35	35	29	1	1015
S114	D	Beam	W 24 x 55	55	29	2	3190
S114	D	Beam	W 24 x 62	62	29	4	7192
S114	D	Beam	W 24 x 68	68	29	4	7888
S114	D	Beam	W 24 x 76	76	29	1	2204
S114	D	Beam	W 24 x 62	62	34.5	1	2139
S114	D	Beam	W 24 x 68	68	34.5	2	4692
S114	D	Beam	W 24 x 76	76	34.5	1	2622
S114	D	Beam	W 27 x 84	84	34.5	1	2898
S121	A	Corridor Girder	W 8 x 10	10	12.5	48	6000
S121	A	Shaft Framing	W 12 x 14	14	7	6	588
S121	A	Girder	W 12 x 14	14	12.5	6	1050
S121	A	Girder	W 12 x 16	16	12.5	4	800
S121	A	Shaft Framing	W 12 x 16	16	15.5	1	248
S121	A	Girder	W 14 x 22	22	12.5	2	550
S121	A	Classroom Girder	W 14 x 22	22	27.5	22	13310
S121	A	Classroom Girder	W 16 x 26	26	27.5	85	60775
S121	A	Beam	W 16 x 36	36	27.5	1	990
S121	A	Beam	W 16 x 31	31	27.5	3	2557.5
S121	A	Beam	W 18 x 40	40	27.5	9	9900
S121	A	Beam	W 21 x 50	50	27.5	2	2750
S121	A	Beam	W 21 x 44	44	27.5	6	7260

Structual Beams Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	730	Ea
Total Weight =	**545.89**	**Tons**
Heaviest Piece =	3,822	Lbs

Drwg No.	Location	Description	Beams	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S121	A	Beam	W 24 x 55	55	27.5	4	6050
S121	A	Beam	W 24 x 68	68	27.5	5	9350
S122	B	Girder	W 8 x 10	10	12.5	36	4500
S122	B	Girder	W 8 x 10	10	9	12	1080
S122	B	Girder	W 12 x 14	14	12.5	9	1575
S122	B	Girder	W 12 x 14	14	13	6	1092
S122	B	Girder	W 12 x 14	14	14.5	22	4466
S122	B	Girder	W 12 x 14	14	15	4	840
S122	B	Girder	W 12 x 14	14	16.5	4	924
S122	B	Girder	W 12 x 14	14	17	10	2380
S122	B	Girder	W 14 x 22	22	12.5	4	1100
S122	B	Girder	W 14 x 22	22	14.5	2	638
S122	B	Girder	W 14 x 22	22	27	1	594
S122	B	Girder	W 16 x 26	26	3.5	2	182
S122	B	Girder	W 16 x 26	26	4.5	18	2106
S122	B	Girder	W 16 x 26	26	12.5	4	1300
S122	B	Girder	W 16 x 26	26	21.5	20	11180
S122	B	Girder	W 16 x 26	26	24	2	1248
S122	B	Girder	W 16 x 26	26	27	12	8424
S122	B	Girder	W 16 x 26	26	28.5	10	7410
S122	B	Girder	W 18 x 35	35	27	2	1890
S122	B	Girder	W 18 x 35	35	28	2	1960
S122	B	Girder	W 18 x 35	35	28.5	12	11970
S122	B	Girder	W 21 x 44	44	12	1	528
S122	B	Girder	W 21 x 44	44	13	1	572
S122	B	Girder	W 21 x 44	44	42	4	7392
S122	B	Girder	W 21 x 48	48	42	7	14112
S122	B	Girder	W 24 x 55	55	26	4	5720
S122	B	Girder	W 24 x 62	62	28.5	1	1767
S122	B	Girder	W 24 x 68	68	23	1	1564
S122	B	Girder	W 24 x 68	68	42	1	2856
S122	B	Beam	W 12 x 14	14	12.5	3	525
S122	B	Beam	W 12 x 16	16	12.5	2	400
S122	B	Beam	W 14 x 22	22	21	2	924
S122	B	Beam	W 14 x 22	22	29	2	1276
S122	B	Beam	W 16 x 26	26	38	2	1976
S122	B	Beam	W 16 x 26	26	29	1	754
S122	B	Beam	W 16 x 36	36	29	1	1044
S122	B	Beam	W 16 x 36	36	38	2	2736
S122	B	Beam	W 18 x 40	40	29	2	2320
S122	B	Beam	W 21 x 44	44	29	2	2552
S122	B	Beam	W 21 x 44	44	38	1	1672
S122	B	Beam	W 21 x 44	44	29	2	2552
S122	B	Beam	W 21 x 50	50	35	2	3500
S122	B	Beam	W 24 x 55	55	23	2	2530
S122	B	Beam	W 24 x 55	55	29	5	7975
S122	B	Beam	W 24 x 55	55	38	1	2090
S122	B	Beam	W 24 x 62	62	35	1	2170
S122	B	Beam	W 24 x 68	68	28	2	3808
S122	B	Beam	W 24 x 68	68	29	2	3944
S122	B	Beam	W 24 x 68	68	35	1	2380
S122	B	Beam	W 24 x 76	76	35.5	1	2698
S122	B	Audit. Framing	W 12 x 14	14	8.5	2	238
S122	B	Audit. Framing	W 12 x 14	14	9.5	2	266

Structual Beams Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	730	Ea
Total Weight =	**545.89**	**Tons**
Heaviest Piece =	3,822	Lbs

Drwg No.	Location	Description	Beams	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S122	B	Audit. Framing	W 12 x 14	14	10.5	2	294
S122	B	Audit. Framing	W 12 x 14	14	12	2	336
S122	B	Audit. Framing	W 12 x 14	14	15	2	420
S122	B	Audit. Framing	W 16 x 26	26	30	2	1560
S122	B	Audit. Framing	W 16 x 26	26	31	8	6448
S122	B	Audit. Framing	W 16 x 26	26	30.5	2	1586
S122	B	Audit. Framing	W 16 x 26	26	31.5	2	1638
S122	B	Audit. Framing	W 16 x 26	26	32	2	1664
S122	B	Audit. Framing	W 16 x 26	26	32.5	2	1690
S122	B	Audit. Framing	W 16 x 31	31	32.5	2	2015
S122	B	Audit. Framing	W 24 x 55	55	31	1	1705
S122	B	Audit. Framing	W 27 x 84	84	41	2	6888
S122	B	Stringer	W 18 x 40	40	17	2	1360
S122	B	End Stringer	W 18 x 40	40	27	2	2160
S122	B	Proj. Framing	W 12 x 14	14	18.5	23	5957
S122	B	Proj. Framing	W 24 x 55	55	18.5	1	1017.5
S122	B	Proj. Framing	W 24 x 62	62	18.5	1	1147
S123	C	Girder	W 12 x 14	14	12.5	1	175
S123	C	Girder	W 12 x 14	14	14.5	12	2436
S123	C	Girder	W 12 x 14	14	15.5	3	651
S123	C	Girder	W 12 x 14	14	17	1	238
S123	C	Girder	W 12 x 16	16	12.5	1	200
S123	C	Girder	W 12 x 19	19	12.5	1	237.5
S123	C	Girder	W 14 x 22	22	14.5	3	957
S123	C	Girder	W 14 x 22	22	25	15	8250
S123	C	Girder	W 14 x 22	22	31	1	682
S123	C	Girder	W 16 x 26	26	30.5	1	793
S123	C	Girder	W 16 x 31	31	25	2	1550
S123	C	Girder	W 21 x 50	50	45.6	18	41040
S123	C	Girder	W 24 x 84	84	45.5	1	3822
S123	C	Beam	W 14 x 22	22	18.5	4	1628
S123	C	Beam	W 14 x 22	22	28.5	3	1881
S123	C	Beam	W 18 x 35	35	27	2	1890
S123	C	Beam	W 18 x 40	40	27	2	2160
S123	C	Beam	W 21 x 44	44	29	4	5104
S123	C	Beam	W 21 x 50	50	27	2	2700
S123	C	Beam	W 24 x 62	62	29	4	7192
S124	D	Girder	W 12 x 14	14	12.5	1	175
S124	D	Girder	W 14 x 22	22	22.5	4	1980
S124	D	Girder	W 14 x 22	22	27	18	10692
S124	D	Girder	W 16 x 26	26	27	32	22464
S124	D	Girder	W 16 x 31	31	27	18	15066
S124	D	Girder	W 16 x 36	36	27	2	1944
S124	D	Girder	W 16 x 57	57	33	1	1881
S124	D	Girder	W 18 x 35	35	29.5	5	5162.5
S124	D	Girder	W 21 x 44	44	27	1	1188
S124	D	Girder	W 21 x 50	50	27	1	1350
S124	D	Girder	W 21 x 50	50	29.5	1	1475
S124	D	Girder	W 24 x 62	62	30	1	1860
S124	D	Beam	W 16 x 26	26	14	2	728
S124	D	Beam	W 18 x 40	40	29	4	4640
S124	D	Beam	W 21 x 50	50	34	1	1700
S124	D	Beam	W 24 x 55	55	29	3	4785
S124	D	Beam	W 24 x 62	62	29	5	8990

Structual Beams Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	730	Ea
Total Weight =	**545.89**	**Tons**
Heaviest Piece =	3,822	Lbs

Drwg No.	Location	Description	Beams	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S124	D	Beam	W 24 x 62	62	34	2	4216
S124	D	Beam	W 24 x 68	68	29	2	3944
S124	D	Beam	W 24 x 68	68	34	1	2312
S124	D	Beam	W 24 x 76	76	34	1	2584
S124	D	Shaft Framing	W 8 x 10	10	5.5	1	55
S124	D	Shaft Framing	W 12 x 14	14	4.5	3	189
S124	D	Shaft Framing	W 12 x 14	14	12	1	168
S124	D	Shaft Framing	W 14 x 22	22	12	3	792
S124	D	Stair Framing	W 14 x 22	22	15	16	5280
			x				
TOTALS						**730**	**1,091,785**

Plate Girder Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	1	Ea
Total Weight =	**22.84**	**Tons**
Heaviest Piece =	45,679	Lbs

Drwg No.	Location	Description	PLATE GIRDER	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S304	Auditorium	Top Flange	PL 2 1/2 x 20	168.4027778	114	1	19197.92
S304	Auditorium	Bottom Flange	PL 2 1/2 x 20	168.4027778	114	1	19197.92
S304	Auditorium	Web	PL 7/16 x 42	61.88802083	114	1	7055.23
S304	Auditorium	Stiffener Plates	PL 5/8 x 9 1/2	69.99240451	3.25	1	227.48
						1	**45,679**

Structural Columns Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	205	Ea
Total Weight =	**212.29**	**Tons**
Heaviest Piece =	6,336	Lbs

Drwg No.	Location	Description	Columns	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S101	A	Unit A Column	W 10 x 33	33	48	12	19008
S101	A	Unit A Column	W 10 x 39	39	48	6	11232
S101	A	Unit A Column	W 10 x 45	45	48	11	23760
S101	A	Unit A Column	W 10 x 49	49	48	5	11760
S101	A	Unit A Column	W 10 x 54	54	48	1	2592
S101	A	Unit A Column	W 10 x 58	58	48	3	8352
S101	A	Unit A Column	W 10 x 60	60	48	4	11520
S101	A	Unit A Column	W 10 x 68	68	48	7	22848
S101	A	Unit A Column	W 10 x 72	72	48	2	6912
S101	A	Unit A Column	W 10 x 77	77	48	1	3696
S101	A	Unit A Column	W 10 x 87	87	48	2	8352
S101	A	Unit A Column	W 10 x 88	88	48	2	8448
S102	B	Unit B Column	W 10 x 33	33	48	8	12672
S102	B	Unit B Column	W 10 x 39	39	48	5	9360
S102	B	Unit B Column	W 10 x 45	45	48	1	2160
S102	B	Unit B Column	W 10 x 49	49	48	6	14112
S102	B	Unit B Column	W 10 x 53	53	48	1	2544
S102	B	Unit B Column	W 10 x 58	58	48	4	11136
S102	B	Unit B Column	W 10 x 60	60	48	2	5760
S102	B	Unit B Column	W 10 x 68	68	48	3	9792
S102	B	Unit B Column	W 10 x 77	77	48	3	11088
S102	B	Unit B Column	W 10 x 79	79	48	1	3792
S102	B	Unit B Column	W 10 x 87	87	48	2	8352
S102	B	Unit B Column	W 10 x 88	88	48	2	8448
S102	B	Unit B Column	W 10 x 96	96	48	1	4608
S102	B	Unit B Column	W 10 x 132	132	48	2	12672
S102	B	Unit B Column	W 12 x 58	58	48	3	8352
S102	B	Unit B Column	HSS 6 x 1/8	7.85	48	17	6405.6
S102	B	Unit B Column	HSS 6 x 3/16	11.68	48	12	6727.68
S102	B	Unit B Column	HSS 8 x 3/16	15.52	48	5	3724.8
S102	B	Unit B Column	HSS 8 x 1/4	21.05	48	2	2020.8
S102	B	Unit B Column	HSS 10 x 3/16	19.72	48	4	3786.24
S102	B	Unit B Column	HSS 10 x 1/4	26.06	48	2	2501.76
S103	C	Unit C Column	W 10 x 33	33	48	6	9504
S103	C	Unit C Column	W 10 x 39	39	48	6	11232
S103	C	Unit C Column	W 10 x 45	45	48	6	12960
S103	C	Unit C Column	W 10 x 49	49	48	9	21168
S103	C	Unit C Column	W 10 x 65	65	48	1	3120
S103	C	Unit C Column	W 10 x 77	77	48	2	7392
S104	D	Unit D Column	W 10 x 33	33	48	8	12672
S104	D	Unit D Column	W 10 x 39	39	48	6	11232
S104	D	Unit D Column	W 10 x 45	45	48	5	10800
S104	D	Unit D Column	W 10 x 49	49	48	8	18816
S104	D	Unit D Column	W 10 x 54	54	48	3	7776
S104	D	Unit D Column	W 10 x 60	60	48	1	2880
S104	D	Unit D Column	W 10 x 68	68	48	2	6528
			x				
				TOTALS		**205**	**424,575**

Roof Framing Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	433	Ea
Total Weight =	**209.73**	**Tons**
Heaviest Piece =	4,142	Lbs

Drwg No.	Location	Description	Roof	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S131	A	Roof Girder	W 12 x 14	14	12.5	19	3325
S131	A	Roof Girder	W 12 x 14	14	15	2	420
S131	A	Roof Girder	W 12 x 19	19	27	4	2052
S131	A	Roof Girder	W 14 x 22	22	27	3	1782
S131	A	Roof Girder	W 16 x 26	26	27	5	3510
S131	A	Roof Girder	W 16 x 31	31	27	3	2511
S131	A	Roof Girder	W 21 x 50	50	27	1	1350
S131	A	Roof Girder	W 24 x 55	55	27	1	1485
S131	A	Roof Girder	W 14 x 22	22	29	2	1276
S131	A	Roof Girder	W 21 x 44	44	29	5	6380
S131	A	Roof Beam	W 18 x 35	35	27	6	5670
S131	A	Roof Beam	W 24 x 62	62	27	4	6696
S131	A	Roof Beam	W 24 x 68	68	27	7	12852
S131	A	Roof Beam	W 24 x 76	76	27	2	4104
S131	A	Roof Beam	W 18 x 40	40	29	12	13920
S131	A	Roof Beam	W 24 x 62	62	29	2	3596
S131	A	Roof Beam	W 24 x 68	68	29	9	17748
S131	A	Roof Beam	W 24 x 76	76	29	2	4408
S132	B	Roof Girder	W 12 x 14	14	12.5	57	9975
S132	B	Roof Girder	W 14 x 22	22	12.5	4	1100
S132	B	Roof Girder	W 21 x 44	44	12.5	1	550
S132	B	Roof Girder	W 12 x 14	14	14.5	1	203
S132	B	Roof Girder	W 16 x 26	26	15.5	2	806
S132	B	Audit Roof	W 16 x 36	36	21	2	1512
S132	B	Roof Girder	W 12 x 14	14	27	1	378
S132	B	Audit Roof	W 24 x 55	55	29.5	4	6490
S132	B	Roof Girder	W 24 x 84	84	33.5	1	2814
S132	B	Roof Girder	W 18 x 35	35	34	16	19040
S132	B	Roof Girder	W 21 x 44	44	34	3	4488
S132	B	Roof Girder	W 21 x 44	44	42	2	3696
S132	B	Roof Girder	W 24 x 62	62	42	1	2604
S132	B	Roof Girder	W 18 x 35	35	42.5	1	1487.5
S132	B	Roof Girder	W 24 x 68	68	42.5	1	2890
S132	B	Roof Girder	W 24 x 76	76	42.5	1	3230
S132	B	Roof Beam	W 21 x 44	44	26	4	4576
S132	B	Roof Beam	W 21 x 50	50	26	2	2600
S132	B	Roof Beam	W 24 x 68	68	26	5	8840
S132	B	Roof Beam	W 24 x 76	76	26	3	5928
S132	B	Roof Beam	W 18 x 35	35	29	2	2030
S132	B	Roof Beam	W 21 x 44	44	29	2	2552
S132	B	Roof Beam	W 24 x 55	55	29	2	3190
S132	B	Roof Beam	W 24 x 68	68	29	1	1972
S132	B	Roof Beam	W 24 x 76	76	29	3	6612
S132	B	Roof Beam	W 18 x 35	35	37	2	2590
S132	B	Roof Beam	W 24 x 55	55	37	2	4070
S132	B	Skylight Framing	W 12 x 14	14	8	12	1344
S132	B	Elev. Hoist	W 8 x 10	10	7	4	280
S132	B	Elev. Hoist	W 8 x 24	24	7	2	336
S133	C	Roof Girder	W 12 x 14	14	12.5	37	6475
S133	C	Roof Girder	W 12 x 26	26	12.5	5	1625
S133	C	Roof Girder	W 14 x 22	22	12.5	1	275
S133	C	Roof Girder	W 16 x 26	26	13	4	1352
S133	C	Roof Girder	W 12 x 16	16	24	4	1536

Roof Framing Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	433	Ea
Total Weight =	**209.73**	**Tons**
Heaviest Piece =	4,142	Lbs

Drwg No.	Location	Description	Roof	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S133	C	Roof Girder	W 14 x 22	22	24	2	1056
S133	C	Roof Girder	W 16 x 26	26	24	6	3744
S133	C	Roof Girder	W 18 x 35	35	28.5	2	1995
S133	C	Roof Girder	W 24 x 55	55	28.5	3	4702.5
S133	C	Roof Girder	W 21 x 50	50	28.5	2	2850
S133	C	Roof Beam	W 24 x 84	84	28.5	3	7182
S133	C	Roof Beam	W 21 x 44	44	29	3	3828
S133	C	Roof Beam	W 24 x 55	55	29	1	1595
S133	C	Roof Beam	W 24 x 68	68	29	1	1972
S133	C	Roof Beam	W 24 x 76	76	29	3	6612
S133	C	Roof Girder	W 21 x 44	44	43	2	3784
S133	C	Roof Girder	W 16 x 36	36	45	1	1620
S133	C	Roof Girder	W 18 x 40	40	45	1	1800
S133	C	Roof Girder	W 21 x 44	44	45	1	1980
S133	C	Roof Girder	W 24 x 84	84	45	1	3780
S133	C	Roof Girder	W 24 x 76	76	53	5	20140
S133	C	Stage House	W 18 x 35	35	38	2	2660
S133	C	Stage House	W 21 x 44	44	38	4	6688
S133	C	Stage House	W 21 x 55	55	38	19	39710
S133	C	Stage House	W 24 x 62	62	38	2	4712
S133	C	Smoke Vent	W 12 x 14	14	5.5	12	924
S134	D	Roof Beam	W 8 x 10	10	20	4	800
S134	D	Roof Beam	W 12 x 14	14	12.5	6	1050
S134	D	Roof Beam	W 14 x 22	22	12.5	1	275
S134	D	Roof Beam	W 12 x 26	26	15	2	780
S134	D	Roof Beam	W 16 x 31	31	25	3	2325
S134	D	Roof Beam	W 24 x 62	62	25	3	4650
S134	D	Roof Beam	W 12 x 19	19	27	8	4104
S134	D	Roof Beam	W 14 x 22	22	27	3	1782
S134	D	Roof Beam	W 16 x 31	31	27	9	7533
S134	D	Roof Beam	W 21 x 50	50	27	1	1350
S134	D	Roof Beam	W 21 x 40	40	29	7	8120
S134	D	Roof Beam	W 21 x 44	44	29	2	2552
S134	D	Roof Beam	W 21 x 50	50	29	1	1450
S134	D	Roof Beam	W 24 x 62	62	29	9	16182
S134	D	Roof Beam	W 24 x 68	68	29	5	9860
S134	D	Roof Beam	W 24 x 76	76	29	1	2204
S134	D	Roof Beam	W 14 x 22	22	35	1	770
S134	D	Roof Beam	W 16 x 26	26	35	3	2730
S134	D	Roof Beam	W 24 x 76	76	35	1	2660
S134	D	Roof Beam	W 24 x 76	76	54.5	3	12426
			TOTALS			**433**	**419,469**

Roof Joists Take-Off

As Prepared by Brandon C. McKee

No. of Pieces =	537	Ea
Total Weight =	**79.09**	**Tons**
Heaviest Piece =	2,800	Lbs

Drwg No.	Location	Description	Joists	Weight (lbs/ft)	Length (ft)	QTY	Total Wt.
S131	A	Gym Roof Joist	22 K 6	9.2	29.5	76	20626.4
S131	A	Roof Joist	12 K 1	5	12.5	42	2625
S131	A	Roof Joist	12 K 1	5	15	14	1050
S131	A	Roof Joist	22 K 4	8	27	22	4752
S131	A	Roof Joist	24 K 4	8.4	27	19	4309.2
S131	A	Roof Joist	22 K 6	9.2	29	24	6403.2
S132	B	Roof Joist	12 K 1	5	12.5	37	2312.5
S132	B	Roof Joist	12 K 1	5	14.5	1	72.5
S132	B	Roof Joist	16 K 2	5.5	14.5	4	319
S132	B	Roof Joist	12 K 1	5	15.5	6	465
S132	B	Roof Joist	12 K 1	5	15.5	23	1782.5
S132	B	Audit Roof	20 K 4	7.6	21	24	3830.4
S132	B	Roof Joist	22 K 5	8.8	27	2	475.2
S132	B	Audit Roof	22 K 6	9.2	29.5	37	10041.8
S132	B	Audit Roof	24 K 4	8.4	29.5	6	1486.8
S132	B	Roof Joist	26 K 4	16	42	5	3360
S132	B	Roof Joist	22 K 4	8	33.5	3	804
S132	B	Roof Joist	28 LH 06	16	42.5	5	3400
S132	B	Roof Joist	28 LH 08	18	42.5	7	5355
S132	B	Joist Girder		20	58	1	1160
S132	B	Joist Girder		25	112	3	8400
S133	C	Roof Joist	12 K 1	5	12.5	26	1625
S133	C	Roof Joist	28 LH 06	16	43	8	5504
S133	C	Roof Joist	28 LH 07	17	45	7	5355
S133	C	Roof Joist	28 LH 08	18	45	10	8100
S133	C	Roof Joist	32 LH 09	21	53	12	13356
S133	C	Roof Joist	36 LH 17	36	53	2	3816
S134	D	Roof Joist	12 K 1	5	12.5	24	1500
S134	D	Roof Joist	12 K 1	5	15	5	375
S134	D	Roof Joist	22 K 4	8	27	38	8208
S134	D	Roof Joist	22 K 6	9.2	27	4	993.6
S134	D	Roof Joist	24 K 4	8.4	27	10	2268
S134	D	Roof Joist	22 K 4	8	35	4	1120
S134	D	Roof Joist	24 K 6	9.2	35	3	966
S134	D	Roof Joist	26 K 7	10.9	35	8	3052
S134	D	Roof Joist	32 LH 9	21	54.5	1	1144.5
S134	D	Roof Joist	32 LH 11	23	54.5	12	15042
S134	D	Roof Joist	36 LH 12	25	54.5	2	2725
TOTALS						**537**	**158,181**

Grade Beams Take-Off

As Prepared by Brandon C. McKee

Drwg.	Type	Footings Length ft	Footings Width ft	Footings Depth ft	Machine Excav. cuyd	Fine Grade sqft	Ftg. Edge Forms sqft	Direct Pour cuyd	Reinforcing Bar Ton
S101	**A**	484.00	1.50	1.67	1210.00	726.00	1618.33	44.81	4.32
	B	40.00	1.83	1.67	122.22	73.33	139.44	4.53	0.40
	C	226.00	1.50	2.00	678.00	339.00	910.00	25.11	2.02
	D	0.00	1.83	2.00	0.00	0.00	0.00	0.00	0.00
	E	43.00	1.00	2.00	86.00	43.00	176.00	3.19	0.39
S102	**A**	88.00	1.50	1.67	220.00	132.00	298.33	8.15	0.79
	B	0.00	1.83	1.67	0.00	0.00	0.00	0.00	0.00
	C	229.00	1.50	2.00	687.00	343.50	922.00	25.44	2.04
	D	25.00	1.83	2.00	91.67	45.83	107.33	3.40	0.22
	E	71.00	1.00	2.00	142.00	71.00	288.00	5.26	0.63
S103	**A**	0.00	1.50	1.67	0.00	0.00	0.00	0.00	0.00
	B	0.00	1.83	1.67	0.00	0.00	0.00	0.00	0.00
	C	358.00	1.50	2.00	1074.00	537.00	1438.00	39.78	3.07
	D	140.00	1.83	2.00	513.33	256.67	567.33	19.01	1.20
	E	154.00	1.00	2.00	308.00	154.00	620.00	11.41	1.32
S104	**A**	328.00	1.50	1.67	820.00	492.00	1098.33	30.37	2.82
	B	68.00	1.83	1.67	207.78	124.67	232.78	7.70	0.58
	C	225.00	1.50	2.00	675.00	337.50	906.00	25.00	1.93
	D	0.00	1.83	2.00	0.00	0.00	0.00	0.00	0.00
	E	44.00	1.00	2.00	88.00	44.00	180.00	3.26	0.38
		2523.00			**6923.00**	**3719.50**	**9501.89**	**256.41**	**22.11**

CIP Concrete Piles Take-Off

As Prepared by Brandon C. McKee

Drwg.	Type	Footings			Auger	Direct	Reinforce
		Diameter	Depth	Quanity	Drill	Pour	Bar
		in	ft	ea	cuyd	cuyd	ton
		18.00	37.00	821	1988.17	1988.17	82.10
					1988.17	**1988.17**	**82.10**

Concrete Pile Caps Take-Off

As Prepared by Brandon C. McKee

Type	Drwg.	Qty	Length ft	Width ft	Depth ft	Machine Excav. cuyd	Fine Grade sqft	Ftg. Edge Forms sqft	3500psi Direct cuyd	Reinforce Bar ton
1	**S101-104**	106	7.50	8.00	3.00	706.67	3710.00	9858.00	706.67	19.60
2	**S101-104**	38	8.00	8.00	3.00	270.22	1368.00	3648.00	270.22	7.03
3	**S101-104**	19	8.00	11.50	3.00	194.22	817.00	2223.00	194.22	5.38
4	**S101-104**	8	11.50	12.50	3.00	127.78	416.00	1152.00	127.78	3.08
5	**S101-104**	2	12.50	12.50	3.00	34.72	108.00	300.00	34.72	1.57
6	**S101-104**	1	8.00	12.50	3.00	11.11	45.00	123.00	11.11	0.53
7	**S101-104**	4	10.00	14.00	3.00	62.22	208.00	576.00	62.22	2.40
8	**S101-104**	2	7.50	12.50	3.00	20.83	88.00	240.00	20.83	1.03
9	**S101-104**	2	8.00	11.50	3.00	20.44	86.00	234.00	20.44	0.83
10	**S101-104**	2	12.00	13.00	3.00	34.67	108.00	300.00	34.67	1.39
11	**S101-104**	2	8.00	12.50	3.00	22.22	90.00	246.00	22.22	1.16
12	**S101-104**	3	11.00	17.00	3.00	62.33	180.00	504.00	62.33	2.36
						1567.44	**7224.00**	**19404.00**	**1567.44**	**46.34**

Slab on Grade Take-Off

As Prepared by Brandon C. McKee

Location	Drwg.	Area sqft	Perimeter ft	SOG Depth ft	Mesh size	Edge Forms lf	Sub Base Finegrade sqft	6 mill Visqueen sqft	Mesh sqft	4000psi Direct cuyd	Trowel sqft	Protect and Cure sqft
SOG #1 Basement	**S101-104**	66785	1000	0.33	6x6 w2.1 x w2.1	1000	66785.00	66785.00	66785.00	824.51	66785.00	66785.00
SOG #2 Basement	**S101-104**	6375	350	0.50	6x6 w2.9 x w2.9	350	6375.00	6375.00	12750.00	118.06	6375.00	6375.00
SOG #1 1st Floor	**S111-114**	11110	600	0.33	6x6 w2.1 x w2.1	600	11110.00	11110.00	11110.00	137.16	11110.00	11110.00
						1950	**84270.00**	**84270.00**	**90645.00**	**1079.72**	**84270.00**	**84270.00**

Slab on Metal Deck Take-Off

As Prepared by Brandon C. McKee

Location	Drwg.	Area sqft	Perimeter ft	SOMD Depth ft	Mesh size	Edge Forms lnft	4000psi Mesh sqft	4000psi Pump cuyd	Trowel sqft	Protect and Cure sqft
1st Floor	**S111-114**	90575	1200	0.208	6x6 w1.4 x w1.4	1200	90575.00	698.88	90575.00	90575.00
2nd Floor	**S121-124**	70480	1500	0.21	6x6 w1.4 x w1.4	1500	70480.00	548.18	70480.00	70480.00
							0.00	0.00	0.00	0.00
							0.00	0.00	0.00	0.00
						2700.00	**161055.00**	**1247.06**	**161055.00**	**161055.00**